November 1980

Smithsonian

Treasures of Greece
on a U.S. tour (p.126);
here, a marble head
of Alexander the Great

One of these people just surrendered.
But which one?

Chamade is a French word that means "the heart wildly beating in surrender."

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Clearing the Nation's Air

What the chemical industry is doing to help clean up the air you breathe

Today, almost all of our industry's plants meet or exceed Environmental Protection Agency clean air requirements. But we're not stopping there. Here are some of the ways we're helping America breathe easier:

1. Committing billions to clean up

The chemical industry is investing more than any other U.S. manufacturing industry in fighting pollution, according to the U.S. Census Bureau. Since 1976, we've doubled our investment in air pollution control equipment. By the end of 1979, this commitment exceeded $2.6 billion. We are also investing millions of dollars in environmental research. The expenditures for one research program alone are expected to exceed $9 million by the end of 1980.

2. Upgrading plants and processes

New plant construction includes sophisticated equipment and technology. Older, existing plants are being refitted with additional equipment to improve emission control and meet environmental requirements. We're also finding ways to recycle emissions to create useful raw materials.

3. Trapping particulates more effectively

A scrubber at one company helps trap more than 1,300 tons of particulate sulfur each year. Electrostatic precipitators help reduce fly ash emissions by nearly 100 percent. "Baghouses," which operate like household vacuum cleaners, also help keep dusts and solid particles from contaminating the air.

4. Capturing vapors with new technology

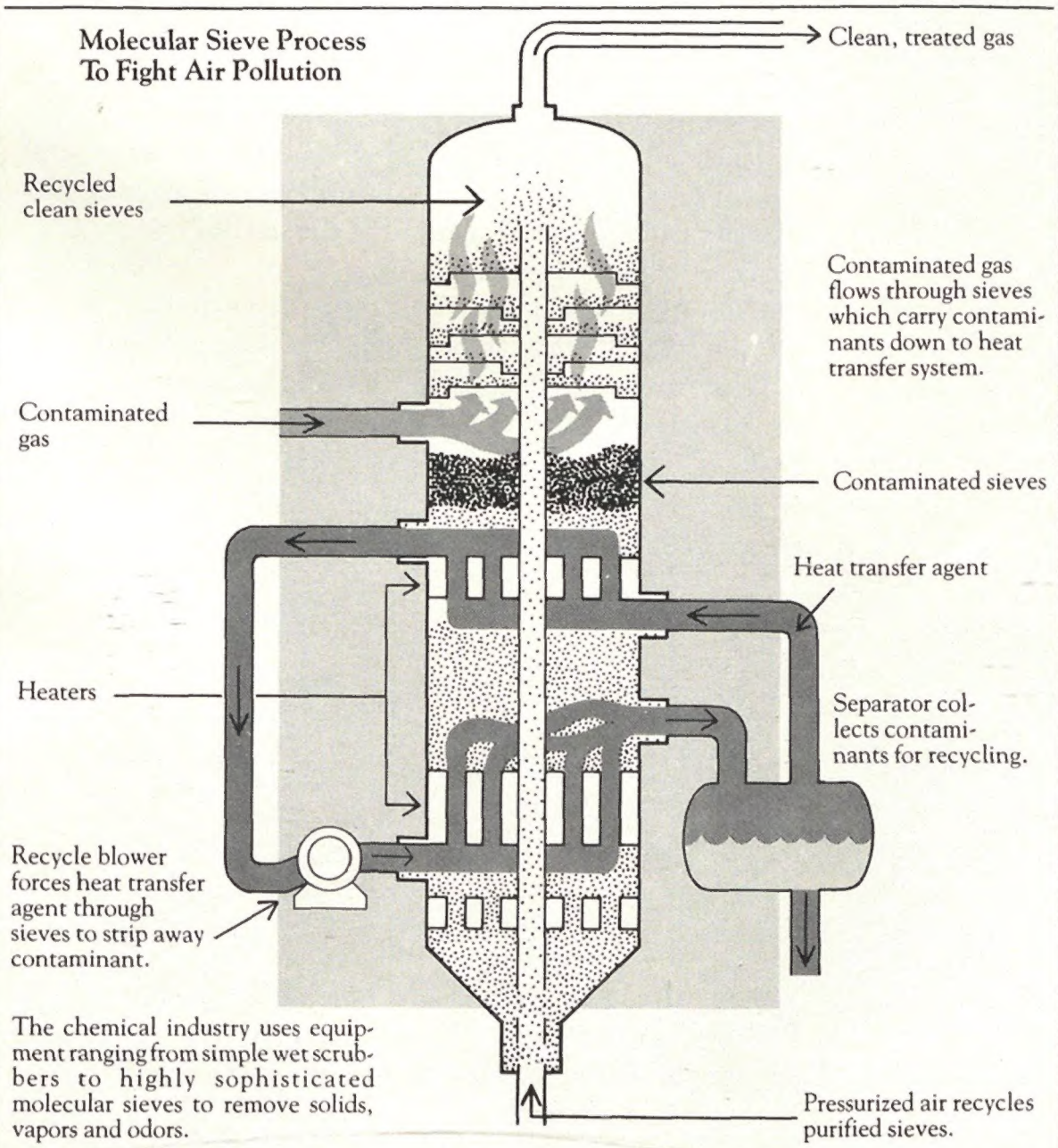
Research is helping us find new and better ways to control gaseous wastes. For example: a highly specialized molecular sieve recovers waste sulfur dioxide from the vent gas of sulfuric acid plants for recycling into the acid-making process. Special incinerators help control odorous gases. We've created compounds which can trap specific kinds of pollutant molecules.

5. Getting more employees involved

We have more than 10,000 employees whose sole job is to operate, maintain and monitor pollution control equipment. And we add to this number each year. At one facility, employee programs encouraged ideas which helped eliminate 75,000 tons of air pollutants each year.

For a booklet that tells more about what we're doing to protect the environment, write: Chemical Manufacturers Association, Dept. GT-11, P.O. Box 363, Beltsville, Md. 20705.

Molecular Sieve Process To Fight Air Pollution


Clean, treated gas
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Contaminated gas
Contaminated sieves
Heat transfer agent
Heaters
Separator collects contaminants for recycling.
Recycle blower forces heat transfer agent through sieves to strip away contaminant.
Pressurized air recycles purified sieves.

The chemical industry uses equipment ranging from simple wet scrubbers to highly sophisticated molecular sieves to remove solids, vapors and odors.

America's Chemical Industry

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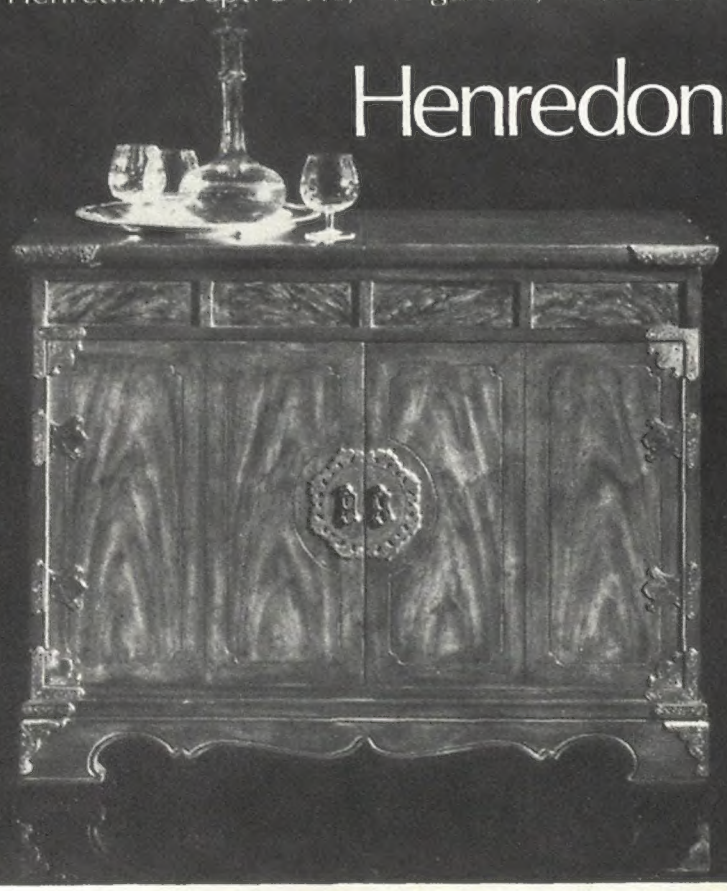

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† Compare the 1981 EPA estimates with estimated mpg for other cars. Your actual mileage depends on speed, trip length, and weather. Actual highway mileage will probably be lower. California excluded. Compared with 1980 Honda Accord and BMW 320i EPA estimates.

Renault 18i

More than just economy

at American Motors

The view from the castle

The Institution's first Secretary not only set its course but, as a great scientist himself, he saw the need for continuing research

Joseph Henry, first Secretary of the Smithsonian (1846-78), remains a dominant figure in the history of science in America. His *Papers,* edited by Nathan Reingold and being published under the auspices of the National Historic Publications and Records Commission, have already reached three volumes and will be completed with 12 more in years to come. During his time as Secretary, Henry, a physicist of international stature, also played a part as one of the great leaders in science administration: he served as president of the National Academy of Sciences (1868-78) and president of the Philosophical Society of Washington, which he helped to found.

Under Henry the Smithson bequest was augmented with Congressional appropriations, and thus a unique partnership developed. First of all, his "college of discoverers," as he called it, became a premier research institution, not simply for so-called basic research, but also for applied science in areas such as weather studies and natural resources.

Secondly, his voluminous correspondence with people throughout the world, extending to more than 15 countries and 250 institutions, stimulated scientific exchange for American researchers as never before.

Finally, the development of the Institution's museums evolved with the help of Henry and his associates into a concept that has survived to the present day. As a keeper of the nation's collections, Henry early decided that these materials should not remain static, but rather should be used for public instruction and welfare. In his speech at the laying of the cornerstone of the American Museum of Natural History in 1874, Professor Henry spoke of the obligation of a museum to supply, by example and documentation, instruction and benefit to the public, as a moral—indeed, even a religious—duty.

He called for the creation of an endowment for this purpose in ringing words: "There is still another duty which this city [New York] owes to itself and the civilized world; I allude to an endowment for the support of a college of discoverers, of a series of men capable not only of expounding established truths but of interrogating nature and of discovering new facts, new phenomena and new principles. The blindness of the public to the value of abstract science and to the importance of endowments for its advancement is truly remarkable. No country in the world is so much indebted for its progress in power and intelligence to science as ours, and yet no country does so little to encourage or advance it."

These words could be mulled over in 1980. We have not maintained the resolve that Henry called for, to utilize our "endowment" of intellectual purpose to visualize the kinds of basic research needed in the world today, nor have we developed the use of museums as open universities, which indeed they represent. The Institution whose course he charted owes an undying debt to Joseph Henry for his vision, but the purposes outlined by him require an equally undying vigilance to maintain.

We should remember, as Henry apparently did, the words of the Psalmist: "Behold, he that keepeth Israel shall neither slumber nor sleep"—Psalm 121:4.

S. Dillon Ripley

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Letters to the Editor

Sociobiology

Dear Sir: No doubt most of us were pleased to see Albert Rosenfeld's article on sociobiology in your September issue, since the debate is an extremely important one. But I was dismayed at the suggestion that those of us who disagree with Edward O. Wilson's assertions are simply reacting with timidity at his hubris in revealing truths that we don't "really want to know." I, for one, am less worried that "the gods will punish us" for attaining superhuman knowledge than I am about the human folly and injustice that will be nurtured by Wilson's distortion and selective use of ethnographic data.

The most damning criticism of Wilson's work is not that he asks bad questions, but that he answers them with poor scholarship and speculation presented to the reader as glossy hardbound "science."
Richard J. Perry
Associate professor of anthropology
St. Lawrence University
Canton, New York

Dear Sir: It would seem preferable to me to be able to blame some sort of genetic aberration for the behavior to which Wilson was exposed at the AAAS meeting in 1978 than to think that the individuals involved had been affected by environmental factors such as education. If, as seems likely, those persons making up the audience were among the better-educated segment of society, their actions go a long way toward proving the point they so shamefully attempted to refute: some people are just intolerant, stupid, selfish.
Jacquie Willoughby
Fairfax, Virginia

Dear Sir: The initial defect in Wilson's theory is that it is based on anthropomorphism. Animal behavior is often described using terms derived from human behavior. For example, an animal social group consisting of several females, their young, with a male is frequently described as a "harem." The word harem carries with it certain connotations that have nothing to do with the animal behavior observed. This may result in people assuming that animal behavior is identical in all respects to human behavior merely because they bear the same label.

This fallacy is compounded when he turns the reasoning around and argues that characteristics of certain animal behavior can be attributed to human behavior simply because they bear the same label. Consider Wilson's example of "altruism" in ants. Assuming that human behavior and animal behavior share certain surface characteristics, he then concludes that if the animal behavior is genetically determined, so must the human behavior be—which leads to an upside-down conclusion.
Ann E. Kruse
Seattle

Dear Sir: Mr. Rosenfeld quotes Robert S. Morison's observation that "[Giordano] Bruno was executed for his interest in the heliocentric theory." There are other viewpoints on the cause of Bruno's condemnation. L. S. Lerner and E. A. Gosselin, in the April 1973 *Scientific American,* wrote that Bruno's prosecutors showed little interest in the scientific aspects of his work. They were convinced that Bruno used the scientific speculation as a metaphor for heretical ideas.
J. T. Keating
Morris, Illinois

Dear Sir: Perhaps those who have attacked Wilson's views would do well to recall the words of David Hume:

"There is no method of reasoning more common, and yet none more blameable, than, in philosophical disputes, to endeavour the refutation of any hypothesis by a pretence of its dangerous consequences to religion and morality. When any opinion leads to absurdities, it is certainly false; but it is not certain that an opinion is false, because it is of dangerous consequence."
Francis P. Larkin
Camp Hill, Pennsylvania

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Dear Sir: At least our civilization has progressed to the point where men like Wilson are only subjected to public tantrums instead of being strung on the rack or burned at the stake. At any rate, after reading Mr. Rosenfeld's article, I bought Wilson's book and find that I am enjoying it thoroughly.
Y. A. Herron
Des Moines

"Year of the Coast"

Dear Sir: As media coordinator for the Coast Alliance (the coalition of environmental groups that have declared 1980 as the "Year of the Coast"), I have seen numerous articles this year that deal with coastal issues, and particularly barrier islands. William MacLeish's article is the best that I have read.

Environmentalists love the beach as much as anyone else, and what American has not dreamed of owning a home on the ocean? Yet, as MacLeish has so well documented, it is pure folly to build near the beach—especially on the fragile, unstable barrier islands.
Patricia Weil
Washington, D.C.

Dear Sir: It is regrettable that your excellent article on barrier islands was flawed by a misleading color photograph of a huge wave breaching Captiva Island during a 1924 hurricane. For the record, Red Fish Pass, shown in the photograph, was cut through Captiva Island during the *1926* hurricane.

I have weathered most of the Florida hurricanes since 1921 and agree completely with the message in the article—get off the barrier islands when threatened by storms and don't build or rebuild on the beach front unless you can afford to lose your investment.
Charles W. Russell
Fort Myers Beach
Mr. Russell is correct. The year of the hurricane was 1926; the photograph was taken by the U.S. Coast and Geodetic Survey (now NOAA) in May 1969. Ed.

Dear Sir: In your otherwise fine article, you have committed an error by crediting "Philadelphia environmental designer" Ian McHarg with preparation of the Sanibel Plan. Although Mr. McHarg was at the time of the plan's preparation a partner in our firm, he was not in any

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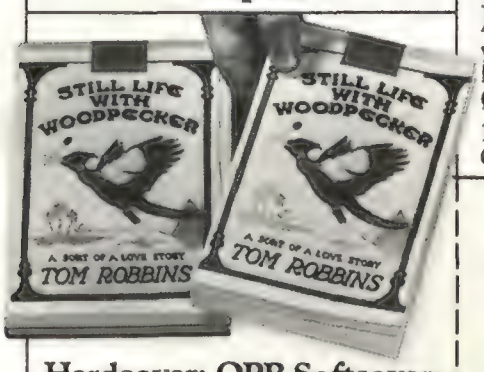
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way involved. I served as the principal planning consultant and was responsible for all phases of the preparation work. Credit for the Sanibel Plan should be given to the citizens who spent hundreds of hours on it, the city government and the undersigned.
William H. Roberts
Wallace, Roberts and Todd
Philadelphia

Dear Sir: Your article states that there are only two comprehensive plans for hurricane evacuation in the country. It overlooked the one in Cape May County, New Jersey, which originated in 1966 and was most recently revised this year.
Lyndon H. Simmerman, coordinator
Office of Emergency Management
Cape May County, New Jersey

Dear Sir: Thank you for publishing the outstanding article by William MacLeish on the barrier islands. He is a fine writer and states the problem very clearly.
Neil L. Frank, director
NOAA National Hurricane Center
Coral Gables

The Vikings

Dear Sir: To update your article on the Viking archaeological exhibition, I wanted to bring to your attention the dramatic arrival of *Odin's Raven,* the replica of a ninth-century Viking ship [see below]

modeled after the famous Gokstad that was brought from the Isle of Man to New York's South Street Seaport Museum. It will be here on public display until the end of November. As your article noted, this ship was a great drawing card earlier this year when it was exhibited at the British Museum in London.
John B. Hightower, president
South Street Seaport Museum
New York City

Birth of the auto age

Dear Sir: What wonderful memories came flooding back as I read "Way back when: frisky, risky birth of the auto age."

In 1918 my mother, Evangelist Aimee Semple McPherson, drove our car from New York to Los Angeles in those days before posh motels and gleaming diners. She was just 28 and heading west to preach in California for the first time. I was eight years old and remember that glorious adventure well. Mother slept behind the wheel, my grandmother, almost 50, stretched out on the back seat, her only luxury the goose-down pillow she never left home without. My five-year-old brother and I had a little lean-to.

At the general stores where we stopped for supplies, we met farmers, cowboys, desert prospectors, real Indians and even old men who had traveled west in covered wagons. We youngsters loved every moment of the trip—except for the wash-ups in icy roadside streams.

When we came to the edge of the great Southwest desert, the sheriff stopped us. It was perilous, he warned, to attempt a crossing alone. We had to wait until three other cars joined us. Each driver took turns being first. Every hour the lead driver would signal, stop and fall back to last place. Thus each car's passengers could enjoy one full dust-free hour, before suffering three hours of swirling, choking sand.

Mother began our trip on October 10, paused for a preaching engagement in Tulsa, and we finally reached California just before Christmas. Our speedometer (set at zero in front of New York City Hall) registered exactly 4,000 miles.
Roberta Semple Salter
New York City

Dear Sir: Under one of your pictures, the caption said: "Like all early cars, this one had to be cranked to start." I am only eight years old, but I know our family has early Stanley Steamers that are not started by cranking.
Heather May
Milan, Michigan

Dear Sir: When the Model T was blossoming out all over, I remember a campaign of derisive jingles came out too. One was: "Ford took two spools and an old tin can/And put them together and the blame thing ran." When Mr. Ford

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was asked about them, he said, "fine—good advertising," or words to that effect.
Robina Bagwell
Spartanburg, South Carolina

Crow Creek massacre

Dear Sir: Your article concerning the discovery of the mass grave at Crow Creek was most interesting, but I would like to know if the looter was punished.
F. K. Lampson
Northridge, California
The looter was identified but not prosecuted under the then existing law, which was declared to be "unconstitutionally vague." But the Archaeological Resources Protection Act of 1979 made looting a felony. Since then, a Utah man was sentenced to 18 months in prison and fined $1,000 for stealing artifacts in Tonto National Forest, Arizona. Ed.

Exotic pets

Dear Sir: Peter Muller's excellent article doesn't mention King Solomon's imported animals. According to I Kings 10:22: "For the king had at sea a navy . . . bringing [every three years] gold, and silver, ivory, and apes, and peacocks."
Rabbi Stephen E. Weisberg
Lubbock

Dear Sir: Peter Muller credits Baudelaire with the dubious distinction of walking a lobster on a leash. In the *Symbolist Movement in Literature,* Arthur Symons says of Gérard de Nerval, ". . . when, one day, he was found in the Palais-Royal, leading a lobster at the end of a blue ribbon (because, he said, it does not bark, and knows the secrets of the sea), the visionary had simply lost control of his visions, and had to be sent to Dr. Blanche's asylum at Montmartre."
Mary E. McDermott
Orleans, Massachusetts

America's Cup

Dear Sir: A. B. C. Whipple's August article on Sir Thomas Lipton was delightful and has whetted my appetite to read his forthcoming book, *Racing Yachts.* I would like the name of the publisher.
Donald M. Peters
New York City
Time-Life Books Inc. is publishing the book on November 14. Ed.

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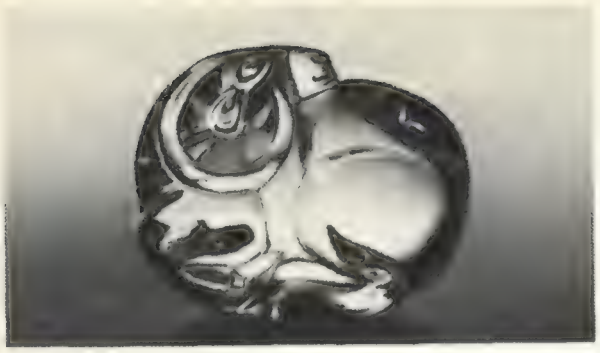

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Smithsonian highlights

Any exhibit titled *"Now I lay me down to eat"* is certain to serve up some surprises. For its November opening, the Cooper-Hewitt has collected intriguing artifacts, old and new, American and international, to illustrate various approaches to the everyday routines of life such as eating, sitting, bathing and sleeping. A few of the works: a convivial bathing pool, a hot tub, cradles and other rockers, some 50 kinds of headrests, a Chinese bed and Buckminster Fuller's "Dymaxion" bathroom of the 1930s.

Special November events

Air and Space Museum
World War II POWs: Two Views (November 20, 7:30 P.M.)—Former American pilot, captured in Germany, joins discussion with his former interrogator, now a U.S. citizen.
The Long-Haired Stars (November 1, 9 A.M.)—Sky lecture looks at comets.
Feature Films (November 6, 13; 7:30 P.M.)—Free aviation films.

Cooper-Hewitt Museum (New York)
"Now I lay me down to eat": A Salute to the Unknown Art of Living (November 18-February 22)—Objects of life (above).
Central Park: Original Drawings (through February 1)—Includes watercolors, design studies from recently discovered cache of the original plans.

National Collection of Fine Arts
Jan Matulka, 1890-1972 (November 21-February 8)—Some 70 works, many from the 1920s and early 1930s.
Eisenstaedt: Germany (through January 4)—Photographs from today and 1930s; also, related concerts, symposium, films: for information call 357-3095.
Romaine Brooks (through February 22)—Eighteen works; also, lecture by Adelyn Breeskin, November 5, 2 P.M.

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Among Turkish art at Freer is lovely *Portrait of a Painter,* circa 1480.

Freer Gallery of Art
Turkish Art (opens November 1)—Examples of bookbinding, textiles, tiles, jades, paintings (above).
Rimpa Screens—Six Japanese screens.
Chinese Painting in the Taoist Tradition (November 18, 8:30 P.M.)—Lecture by Michael Strickmann, University of California, Berkeley.

Hirshhorn Museum & Sculpture Garden
Avant-Garde in Russia, 1910-1930: New Perspectives (November 20-February 15)—Comprehensive collection.
The Little Prince (November 15, 11 A.M., 1 P.M.)—Animated film for children.

Museum of Natural History
Photos of Guatemala (November 29-January 25)—Exhibit by Marilyn Anderson.
Coral Reef—Newly opened, spectacular living coral reef community.

National Portrait Gallery
Belva Ann Lockwood: I Am Not Easily Squelched (November 1, 1:30, 3 P.M.)—Dramatic presentation by Chris Prouty; reservations advised, 357-2920.
Official Photographs: Portraits of the Carter Administration (through November 30).

Renwick Gallery
American Porcelain: New Expressions in an Ancient Art (November 7-August 16)—Works of 108 contemporary artists.
Berlin Porcelain (through November 23).
Porcelain Painting Demonstrations (November 1-23; 11 A.M.-3 P.M. daily).

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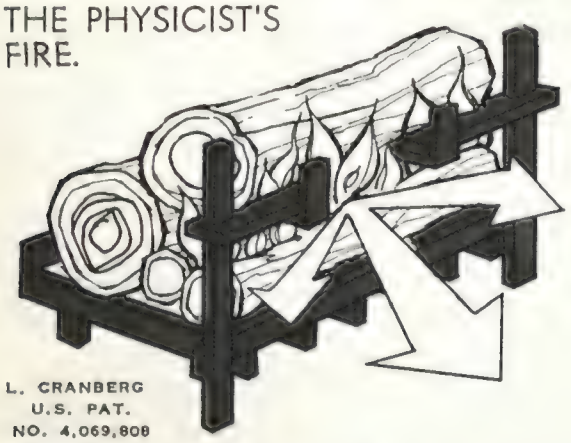

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Clockwork Universe (November 7-February 15)—Some 120 German clocks.
Buckaroos in Paradise: Cowboy Life in Northern Nevada (ends March 16)—p. 28.
In Touch: Printing and Writing for the Blind in the 19th Century (through September)—Includes early alphabets, machines; labels will be in Braille.

Smithsonian events

For tickets to November resident associate events, call 357-3030:
The White House with Desmond Guinness (November 3, 8 P.M.).
Tropical Forests: Endangered Resources (November 24, 8 P.M.).
Tracing Eskimo Life on St. Lawrence Island (November 6, 8 P.M.).
Eugene Atget (November 13, 8 P.M.)—The photographer's life and work.
The Ebla Tablets and the Bible (November 15)—All-day seminar.
History of London (November 22, 24)—Two-day seminar.
Cowboys: A Western Film Series (Sundays, 3 P.M., beginning November 16).

For tickets to performing arts events, call 357-1500:
New York Pantomime Theatre (November 6-30)—A&I Discovery Theater, Wednesdays through Sundays.
Steve Lacey on Sax (November 2, 6 P.M.).
Dynamics/Norvus Miller and Company (November 9, 3 P.M.)—Gospel concert.
Mac Wiseman (November 16, 8 P.M.)—Old-time country music.
Naughty Marietta—Five performances of operetta songs, November 20-23.
Smithsonian Chamber Players (November 23, 24; 8 P.M.).

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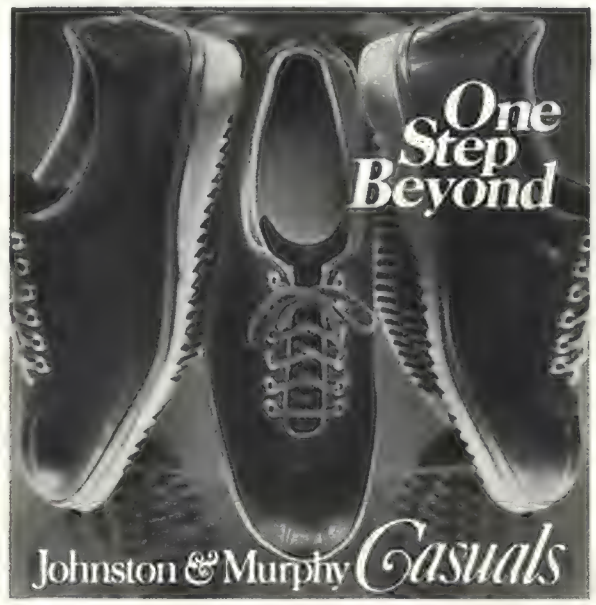

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This music and conversation program is broadcast weekly on some 65 stations across the country. (The schedule is different in Washington, D.C.)

Fifties Art; also, *The Essence of the Baroque* (week of November 2).

Zelda and Scott Fitzgerald; also, *The Rocket Team*—talk on the early days of rocketry (week of November 9).

Footlights and Spotlights—pianist John Eaton contrasts theater with popular song music (week of November 16).

Puppets and Things on Strings; also, *Giants in the Sea*—discussion of the shy squid (week of November 23).

John Canaday Examines the Role of the Critic; also, *Farming the Oceans* (week of November 30).

Regional Events

The National Associate Program's Regional Events 1981 series begins February with week-long lectures and workshops in Tampa and St. Petersburg. Also scheduled: Little Rock (March), Denver and Kansas City, Missouri (April), Providence, New London (May), Rochester (June). Associates receive invitations about one month in advance. Those who spend the winter in Tampa or St. Petersburg but receive the magazine elsewhere may request invitations by writing: Regional Events, 1208 A&I, Smithsonian, Washington, D.C. 20560.

Smithsonian Institution Traveling Exhibition Service

SITES circulates exhibitions to hundreds of cities outside Washington, D.C. To sponsor a show in your community, write to Eileen Harakal, SITES, Smithsonian Institution, Washington, D.C. 20560. Here are some November exhibits:

Mobile, Alabama (November 15-December 28)—*Sèvres Porcelain,* Fine Arts Museum of the South.

Iowa City (November 15-December 14)—*Musical Manuscripts,* University of Iowa Museum of Art.

Lexington, Massachusetts (November 22-January 4)—*The Working American,* Museum of Our National Heritage.

Buffalo (November 15-December 28)—*Jouets Americains,* Albright-Knox Art Gallery.

Houston (November 15-December 14)—*Posters for Victory,* North Harris County College.

Lubbock (November 15-December 14)—*American Drawings II,* Museum of Texas Tech Design.

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Buckaroos in Paradise

Cowboy fever: we've all had it at one time or another. Now, an exhibit at MHT shows us the life we've been missing.

Organized by Richard Ahlborn, Curator of Community Life, *Buckaroos in Paradise* is an outgrowth of a two-year project documenting the community life and traditions of Paradise Valley, Nevada, by the Library of Congress' American Folklife Center. To prepare for the exhibit, Ahlborn made three trips to Paradise Valley, selecting items and talking with the buckaroos, ranchers and other local people.

The word buckaroo (from *vaquero*, meaning cowboy) reflects the strong Spanish influence on these northern Nevada cowboys. With the advent of power lines, paved roads and pickup trucks, their traditional life of riding, roping and branding has been considerably altered. Unlike the loners of yesteryear, up to half of the buckaroos today are married and live in small trailers rather than bunkhouses. But the cattle out on the range are still rounded up and moved once a year through the rugged terrain by riders on horseback.

Buckaroos shows us the many facets of this life. The highlight is a completely furnished bunkhouse: from roof shingles to floorboards, the pieces were marked, dismantled, trucked East and reconstructed in the museum by exhibit specialist Charles Rowell. Inside the cabin is a full-size manikin wearing the authentic duds—right down to Penman long johns —worn by buckaroo Chuck Wheelock on the day he and Ahlborn first met.

In all, there are some 200 artifacts of the buckaroo's everyday life—saddles, tools, cooking utensils, handcrafted items of leather and animal hair. All are explained by accompanying text, photographs, maps and a catalog. An eight-minute movie portrays the October 1979 roundup and trail drive of Paradise Valley's 96 Ranch.

Although some of our romantic notions about cowboy life may be nonsense, Ahlborn found that the essential image of cowboys is justified. "They *don't* sing to the cattle," he says. "But every buckaroo I talked with seemed fully conscious of his freedom . . . that he's his own man."

—Constance Bond

Photographs by A. F. Harrell

Taking a break during 1979 trail drive, buckaroos gather for group portrait with rancher Les Stewart (fourth from right) at Nevada line-camp cabin.

Custom-laced scabbard cradles pocket knife, buckaroo's all-purpose tool.

Four horseshoes soldered to piece of harness equipment make ashtray stand.

Manikin, posing as Chuck Wheelock, savors morning coffee in bunkhouse.

Partially completed cheek plates for horses' bits include "Lady's Leg."

Chaps of unshaven Angora goathide provide armor for buckaroo's legs.

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Around the Mall and beyond

Statues that form part of Juan Felix's life and death of Christ seem to march along road, away from his chapel. Hut on left contains more of his carvings.

A display of American porcelain opens this month at the Renwick Gallery. It's a marvelous show. If you thought porcelain was limited in the forms it could take, you will experience the delight of new doors opening in your mind.

Lloyd Herman, director of the Renwick, showed me some of the stuff that is in the exhibit. It was gathered in lockers and on tables in the basement of the Renwick, and I must say the basement of that grand old mid-19th-century building knocked me out. It's all stone and brick—massively thick walls with so many arches that it takes on a sort of cloister effect, the whole place whitewashed. It seemed to demand use as a wine cellar with huge casks stolidly aging under that cryptlike ceiling. Instead, it has a number of young people in blue jeans, organ-

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izing beautiful things for future shows.

I was charmed by all this basement activity and considered that I had been allowed a rare glimpse of the Smithsonian's inner workings. But Lloyd quickly pointed out that I hadn't seen the half of it. This was simply where the wonders to go on display arrive. They have to come from somewhere and be rounded up first. And sometimes the acquisition process involves more than the mere writing of a form letter to be mailed to a hundred or so artist-craftsmen.

Lloyd recently returned from a trip to Venezuela to look over traditional textiles with an eye to a possible future show. And here he became involved in an unplanned side trip into the Andes to visit Juan Felix Sanchez, a talented weaver, but much more than that. "He was what the Japanese would have labeled 'a living national treasure,' " Lloyd told me.

From Caracas, Lloyd and two Venezuelan folkcraft experts flew to Mérida, same name as the city in Yucatán, then drove one hour to a small village in the foothills of the Andes. Here they were organized into a pack trip by a Venezuelan "wrangler" and his seven-year-old sister. Lloyd, an urbane and rather elegant man, found himself astride a horse for the first time since he was five, facing a hot, difficult, six-hour journey.

Lloyd's thoughts on this and other matters were not easily communicated, since only one person spoke any English. So he found himself, in late afternoon, silently looking down into a mountain valley, perhaps 8,000 feet above sea level, where the home of Juan Felix stood. Hot, dirty, achingly tired, he clopped on down into another world.

It was a peasant house, he says, but unusual because it had several rooms, including a loft where the loom resided. Juan Felix, aged 79, is a local legend. He likes to keep up with the world outside through the papers and magazines supplied him by visitors. He also gets crude sugar from beyond his valley—it comes in the form of a brick—as well as coffee whenever possible.

It was cold at night. Lloyd Herman, known around Washington for his gregariousness and sophistication, huddled silently by the fire, filled his belly with simply cooked fare, sipped coffee gratefully and slipped into a sort of primitive numbness while the conversation rippled around him—apparently a long and mu-

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tually gratifying series of "do you knows," and "do you remembers."

It was the next morning, before the heat set in, that he was led to the top of a ridge half a mile away where stood the chapel that Juan Felix built. It is small—not much larger than Lloyd's office at the Renwick—and built of fieldstone, simply fitted together. Lloyd says there are unusual elements of design in the building—the use of a particular arch over the doorways, other features that are repeated. "It shows a combination of spirituality and creativity," says Lloyd.

Juan Felix added many statues and figures to his chapel and to the grounds around it. He carved them out of trees. He feels that his project, dedicated to a local "saint" and hero, has attracted many miracles. For example a hunter, a local man who knew Juan Felix and the chapel, accidentally came upon a round, hollowed-out rock, perfect for a baptismal font. He lugged it to the chapel, and it's in place now. Other things happened to make the construction easy, the furnishing natural and effective.

Juan Felix has trouble getting weaving material, but when he has something to work with, he's exceptionally good. Lloyd Herman lined up an exhibit for the Renwick for, maybe, 1984. The Renwick? The place seemed light years away; the life of a Smithsonian museum director seemed to belong to someone else. The party mounted up for the ride back, and Lloyd was glad to leave. And yet . . . well, it was an unlikely interlude. Such things happen in this Institution. And the memory becomes part of you.

Increase and diffuse knowledge, said James Smithson, founding us in his mind all those years ago. One way is to dig up displays of porcelain or of weavings and arrange for them to be shown. Another way is to take a big chunk of knowledge about air and space, as presented in our mighty museum of that name, and turn it into filmstrips for use in schools.

Mel Zisfein, Deputy Director of that museum, set wheels in motion to do just that, and beginning around now, 21 separate air-and-space filmstrips are ready for classrooms.

Mel told me that the idea has been cooking for about four years, and that filmstrips are a very good medium for getting a museum message across to students. They aren't just slide shows. They

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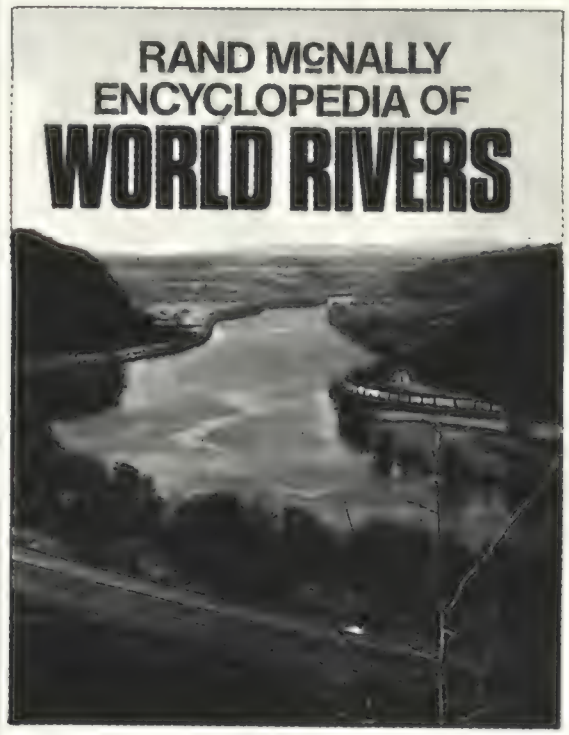

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are tied in with taped music and text matter and the pictures are paced in such a way that they have almost the drama of more expensive film or video tape.

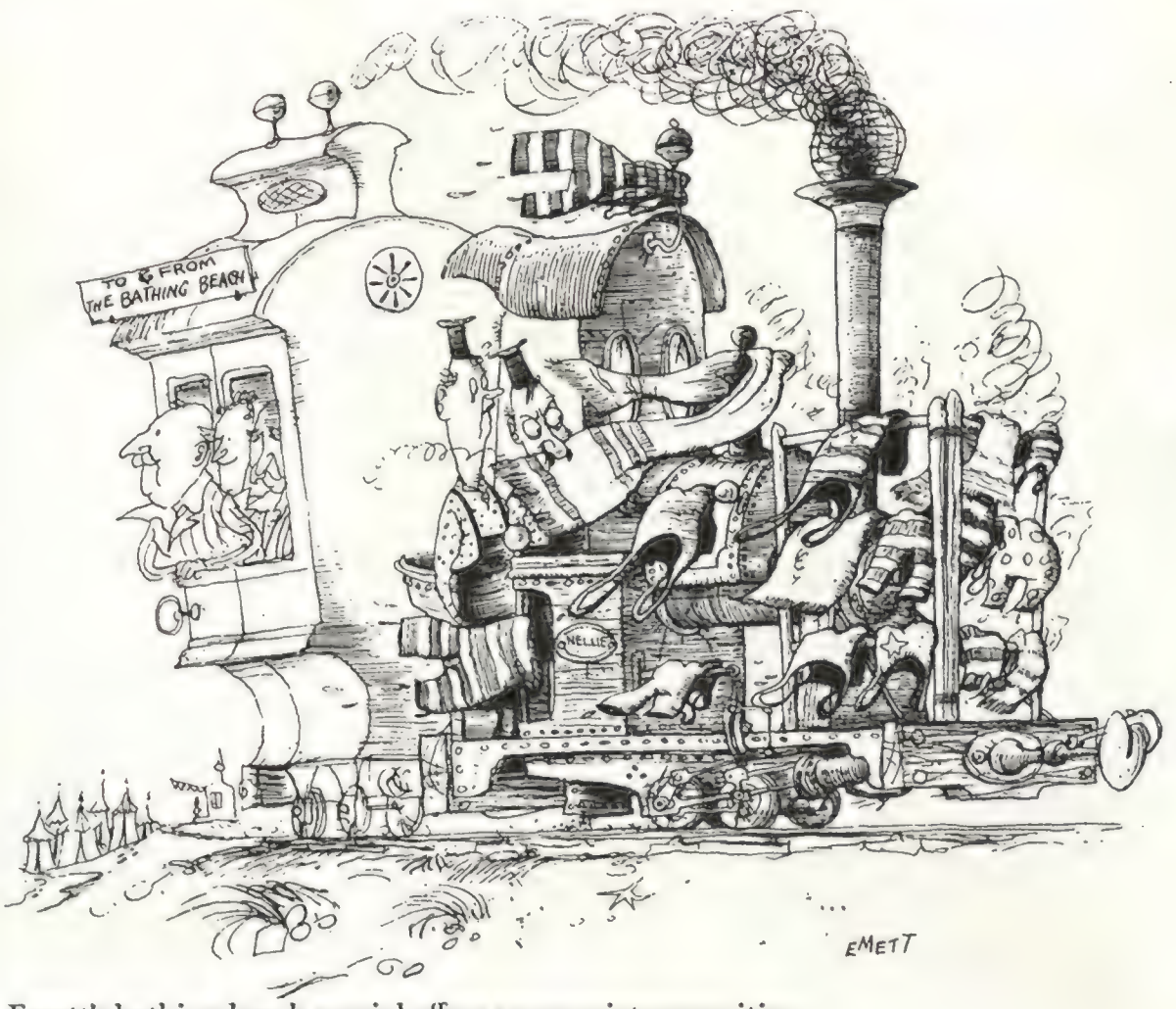
I learned that the air-and-space strips deal with broad subjects that have some footing in the museum galleries, but that carry the viewer far beyond what the galleries show. Janet Wolfe of the museum's educational division sat me down and ran through some samples. *Apollo to the Moon,* for example, takes you from President Kennedy's "fight talk" following the Soviet orbiting of Yuri Gagarin to, and beyond, America's later "giant step." There are two versions of each of the subjects: an elementary school version with its teachers' treatment (instructions and charts and added information to help the teacher explain what's going on) in one box, and a "secondary" version, also suitable for adults, in another. The package, bookshelf size, is distributed by the National Audio Visual Center, which is a federal office. This, of course, keeps the unit price low for schools—about $20, I was told, for the elementary school box.

After describing Rowland Emett's sculptured space ship, *Pussiewillow II,* at the National Air and Space Museum's art gallery in the June issue, I was made aware of a book of cartoons by this wild and talented artist. It was published three years ago by the Stephen Greene Press of Brattleboro, Vermont, and it's called *The Early Morning Milk Train.*

Lovers of Emett's insane locomotives, headed (they think) for Stuffworthy Junction, will find fulfillment in these hundred or so railroading situations. I can't tell you how many because nobody numbers pages in an Emett book. It would be quite wrong to, you know. Spoil the whole idea, and all that.

Anyway, the trains are all gathered here, including "The Bird Watcher's Special to Twittering Woods," tugged through the forest by an engine named "Tawny Pipit" whose towering smokestack is disguised within a hollow tree, and the situations are direct from Mr. Emett's own Bedlam: the "Saturday Slow," for example, caught in a flood and being towed along its deeply submerged track by the "Oyster Bay Life-Boat" while its engineer (sorry, "train driver") sits disconsolately on the roof of his cab. "After all, he's the captain, in a manner of speaking," explains one of the rescuers.

—EDWARDS PARK



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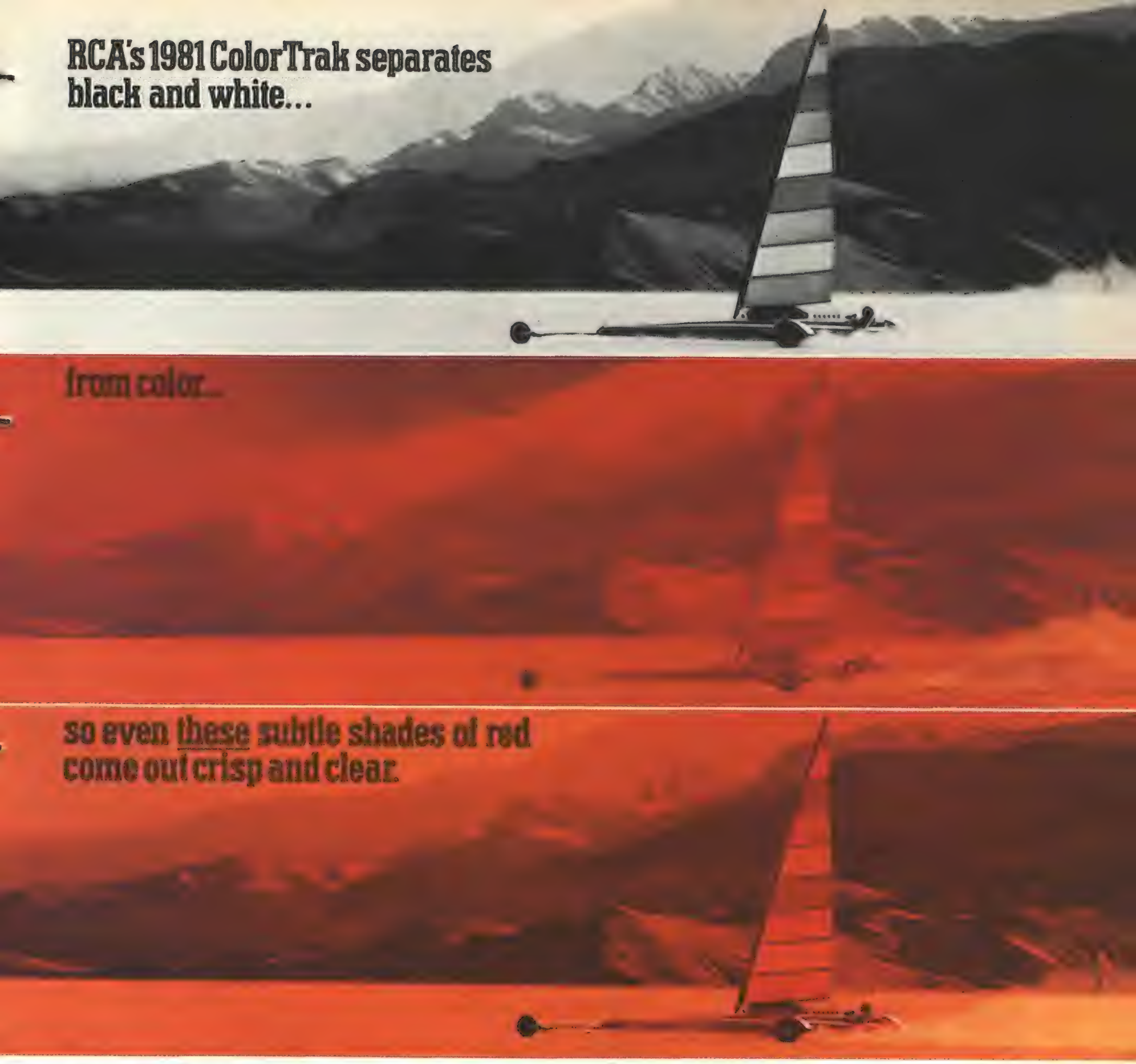
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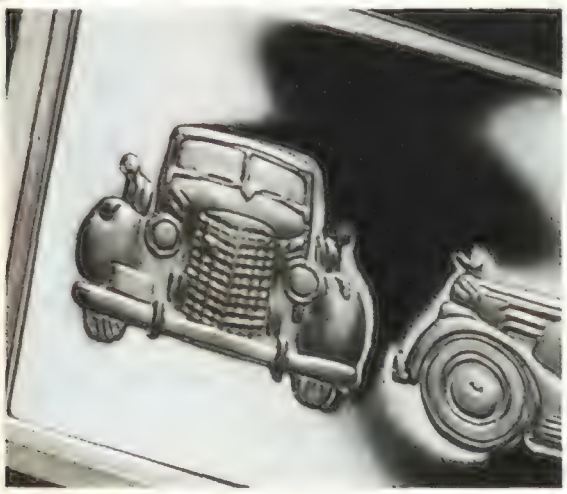

1938 Cadillac Convertible silver miniature illustrated above is approximately five times actual size to show fine detail.

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Phenomena, comment and notes

New patents for a recent month show how inventive Americans still are: would you believe a better mousetrap?

If there is anything more American than apple pie, it is probably the kind of ingenuity that inspired Carl R. Perleberg of Quincy, Washington, to invent a better apple tree. His tree, an improved variety of Red Delicious, was patented this August along with several thousand other examples of our endless quest for human improvement, from a disposable paper umbrella to a portable spittoon. Throwing away your wet umbrella will appeal to anyone who has ever come in out of the rain looking for an umbrella rack that isn't there, and spittoons are even harder to find these days.

The possibility that American ingenuity is on the wane has received a great deal of attention recently. Industry has been telling the government that too much red tape, overregulation and bureaucracy are stifling innovation, and the government has been setting up more committees than you can shake a stick at to investigate the situation. The news media have added to our worries with reports of an innovation crisis, and it would almost appear that we have realized the prophecy of Henry Ellsworth, Commissioner of Patents, in his 1843 report to Congress: "The advancement of the arts, from year to year," wrote Ellsworth, "taxes our credulity, and seems to presage the arrival of that period when human improvement must end."

The innovation crisis may be real, although not all of the committees set up to investigate it even agree on a definition of innovation, let alone on how to measure it. Whether or not a new invention gets manufactured, marketed and widely used is a different issue from whether or not it gets invented in the first place. But a close look at the patents issued to our native tinkerers by the U.S. Patent and Trademark Office in just one recent month suggests that, in all likelihood, the decline of American ingenuity has been greatly overemphasized. If we are really losing our inventiveness, the inventors don't seem to know about it.

The ordinary door hinge, for example, would not seem to need any further improvement. It has been around, in a great many shapes and sizes, for a long time. But inventors rarely know how to leave well enough alone. They have been reinventing and redesigning the door hinge for years, and are still at it. The self-closing hinge patented by a New Jersey man in August, with its coil-and-cam

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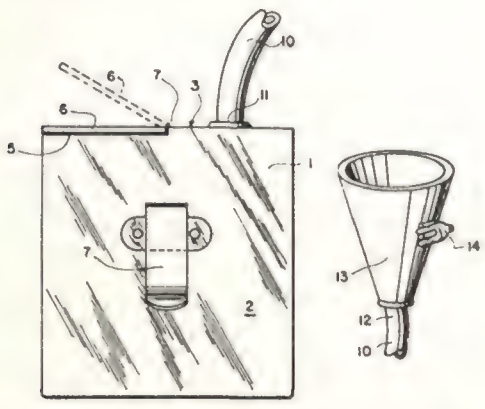
mechanism for converting the upward force of a spring into a torque directed toward closing the door, is not the first spring-loaded door hinge and most certainly will not be the last way to get around the problem of having to close the door yourself.

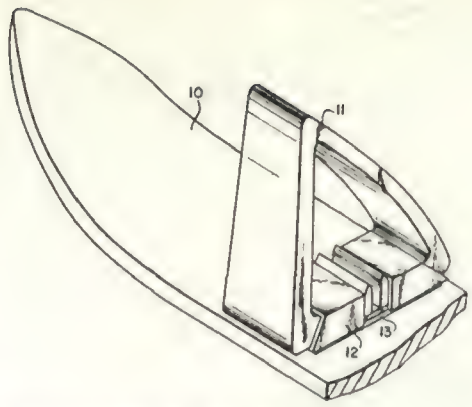
Necessity may still be the mother of many inventions, but frustration must have given birth to some of the others patented along with the door hinge. The invention of a plastic container lid that can be folded into a spoon will be welcomed by any coffee drinkers who buy their coffee from vending machines, which sometimes supply lids to go with a cup of coffee but rarely bother to supply a spoon to stir it.



Patent diagram for portable spittoon

If having to stir your coffee with your thumb is frustrating, even more so is the common predicament of trying to make use of the last bit of ketchup in a ketchup bottle. The thumb is of hardly any use in this situation, and a spoon is too wide to get through the bottle's narrow neck. Rapping the bottle with your hand (which may work when the bottle is full) is too slow a method and pretty hard on the hand. But a Brooklyn inventor has done away with this dilemma by patenting a "ketchup-rapping apparatus." Vitale Catalano's ingenious device mechanically upends one almost empty, narrow-necked ketchup bottle over another one, "so as to allow gravity flow of the contents of the inverted first bottle down into the second bottle." Of course, the big ketchup makers may not really want you to save that extra ketchup. Their profit margins may very well be stuck on the inside of all those bottles.

Frustration may seem as much a part of modern life as the sand traps on a golf course, which golfers have always accepted stoically as part of the game. But inventors play golf, too, and not always very well. Perhaps as a consequence, one



Anti-ski-crossing device

of them has patented a collapsible rake head you can attach to your club "for raking sand traps and retrieving golf balls."

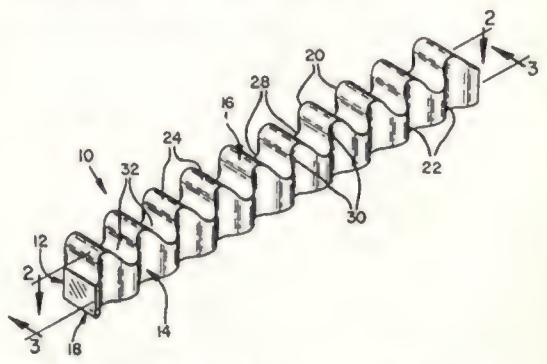
Golf is not the only sport inventors have taken up. Skiers may be saved from their own awkwardness on the slopes by an Idaho inventor's "anti-tip-crossing device for skis," a pair of upright plastic barriers attached near the tips of the skis to keep one from swiveling over the other (above). Two California inventors have gone a step further in this line of improvement by attaching a seat and steering handles to a pair of skis, allowing the skier to sit and drive down the slopes in a "ski-supported vehicle."

Many types of inventions adapted to modern use demand a mastery of technology beyond the ordinary person's ken, and the great majority of the month's patents are of this nature. A new process for coal gasification, for example, or an apparatus for extracting energy from temperature differences in the ocean, or even a new wrinkle in windmills, may all be helpful in easing our energy shortages, but you would no more think of inventing one yourself than a moonshiner would invent a sophisticated solar still for making cheaper distilled water.

In the more mundane "Why didn't I think of that?" category of inventions, there is a Virginia man's rake with replaceable, snap-on plastic tines, a boon to anyone who has ever tried to rake up the leaves with a gap-toothed but otherwise perfectly serviceable lawn rake. A Georgian's self-rotating hook for hanging plants belongs in the same category. It is a simple spring device that slowly twists as water evaporates from the soil, lightening the load on the hook. If you have ever wrestled with a large asparagus fern while unhooking it from the ceiling to turn its drooping greenery toward the window, you will be happy to be rid of this periodic chore, although you had better remember to water the plant.

Like everyone else inventors have to eat, and sometimes they put their minds to improving the food. One Maryland man, for example, got a patent for an English muffin and his particular way of baking it, while a thirsty inventor from Illinois patented a new yogurt beverage, but the sine qua non of culinary improvement must be the mechanical contraption patented by a California man as a "dough-dividing and toroid-forming apparatus." This, in fact, is nothing more mysterious than an improved bagel-making machine.

Four men who can definitely chew gum and invent things at the same time obtained a patent for a "long-lasting chewing gum and method" (of making it, not chewing it), which they claim provides a prolonged sweet taste. And for the fast-food lover there is the patented frozen french-fried potato segment suitable for microwave reheating (below). This particular french-fried potato segment is quite unmistakable, according to its inventors, "each potato being in the form of an elongate body having a generally rectangular cross section and first and second pairs of generally opposing side surfaces, each side surface having an alternating sequence of laterally extending, rounded hills and valleys of substantially uniform dimensions, each of said hills having a top and each of said valleys having a bottom, each hill of one side surface of said first pair opposing a corresponding valley of the other side surface of said first pair," and so on.



Frozen french-fried potato segment

It may have been with such mouth-watering morsels in mind that a Colorado inventor devised his "method and apparatus for controlling eating behavior." This is a handy electronic calculator designed to measure the time you allow for chewing each bite of food, on the basis of which you can adjust your chewing time between bites, and regulate the total number of bites you take per meal, or per week for that matter. It is a biofeedback

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device, somewhat similar to the even more fascinating biofeedback device a New Jersey psychologist patented a few weeks later, designed to help you stop snoring. An alarm wakes you up each time you snore, to let you know, and in the morning indicates how many times it had to wake you. By keeping track of your performance, you can use the principles of biofeedback to stop snoring.

Inventing artificial parts for the human body has become so commonplace that the distinction between medicine and mechanical engineering has sometimes seemed to blur. In the month at hand, inventors patented an artificial hip and knee, as well as replacements for the minute set of bones in the inner ear called ossicles, whose dimensions are measured in no more than hundredths of an inch.

The problem of hair is one that has plagued inventors as it does the rest of us, whether it be too much or not enough. In August, the problem in New Jersey was too much hair, and an Upper Montclair man was granted a patent for a new "electrolysis hair-removal apparatus." In South Carolina, by contrast, it was the lack of hair that worried a Clemson inventor, who patented a method for artificially implanting it where it wasn't. Californians, meanwhile, were absorbed in simply measuring it, with a new electronic hair-length measuring apparatus that is sort of a hybrid between a roller and ruler. And back in New Jersey, with all that hair, a Bridgeton man was proving that there is more than one way to skin a cat by patenting a "vacuum device for hair" to deal with the dandruff.

Cats, of course, are not the only thing that inventors have found more than one way of skinning. The patent granted to an Ohio man for his "dehider" describes in mechanical detail the blades, gears and greasing apparatus of this flaying tool, but without ever indicating what is to be flayed. Another advance of this sort is an improved "poultry picking machine," with adjustable pickers. And to provide the carcasses to be picked, a North Carolina inventor patented a "live poultry catching and shackling apparatus."

While they design such devices in the name of animal husbandry or food processing, inventors also have pets, and try to make life a little easier for them. A San Francisco inventor's "magnetically unlocked pet door" gives a dog the same sort of electromagnetic "key" to its door as the ones that allow drivers to open their garage doors by remote control. A device on the pet's collar emits the signals

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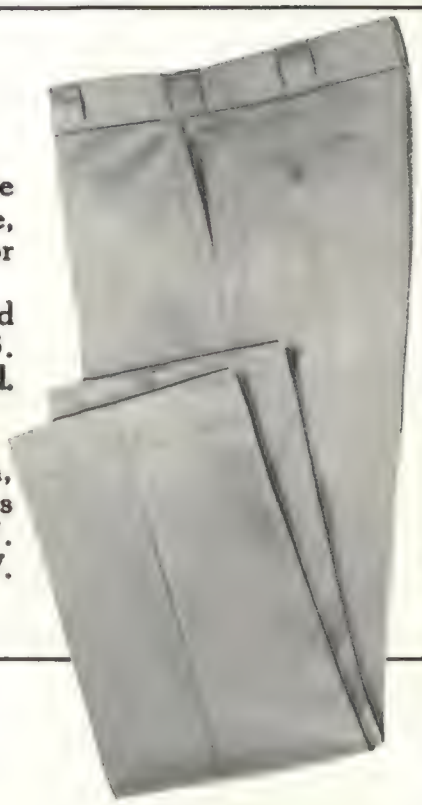

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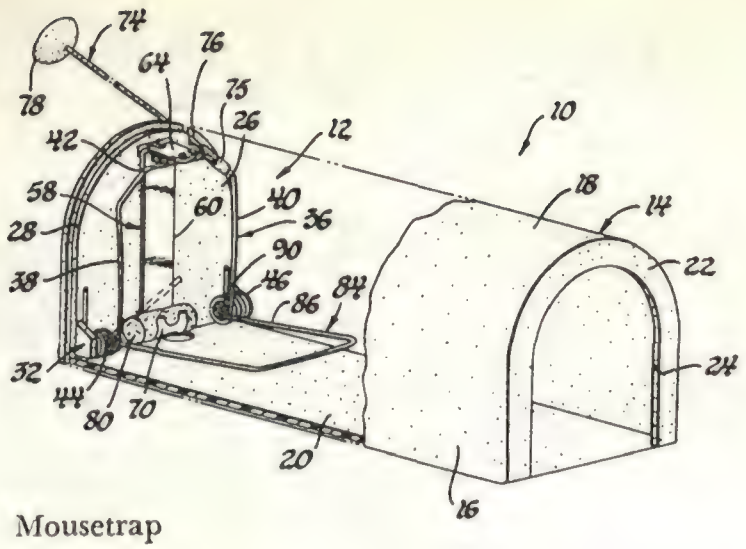

Mousetrap

that unlatch the door. And if another invention finds acceptance among the consumers, you soon may be adding frozen pet foods to your shopping list.

Inventors have given thought not only to what their pets eat but to how to dispose of their waste. Under the impetus of New York's scoop law, requiring walkers of dogs to collect their litter, two New Yorkers patented a shovel-type scraper fitted with a flexible bagging device. In Miramar, Florida, the problem was solved several months earlier with the patenting of a "water closet for pet use" with "a pet activated switch for activating an automatic flush system."

Besides pets, inventors have babies and don't waste any time on them that an invention could save. A Michigan woman patented a "baby changing apparatus" that is more benign in its mechanical operations than the device for catching and shackling chickens. An improved disposable diaper, with slits that make it easier to fold, is a simpler alternative to the Michigan woman's appliance. And an Illinois man has come up with a "sink-mounted infant bathing device" that looks like one of those molded plastic car seats for babies. Taking a bath in it may be an experience about like being tucked into a convertible for a ride through a car wash.

If it survives its infancy, a youngster may continue to inspire new inventions throughout childhood. Toys are an example, such as the "harmless sonic toy" patented by a New Yorker, comprising an apparatus in the shape of a submachine gun which can be loaded with a rolled strip of those plastic imbedded bubbles used in sheets for packing fragile objects, and which kids always delight in popping. Games are another fertile field for invention, although not all the games are intended for kids. One hopes not, considering the Minnesota inventor's patent for a "board game simulating drunk driving."

While many inventors are trying to improve the world by adding something that we need, there are others who would like to get rid of something that we don't. We may be plagued by pests, but it is not for want of inventions to do them in, such as an improved fly catcher, a sex attractant to catch tobacco moths, an assemblage meant to trap insects in a wide-mouthed jar, and a sophisticated electronic apparatus for generating random ultrasonic noise to drive the insects away, if not totally crazy.

It is hard to conclude from all this that American inventors are not up to snuff. But perhaps most encouraging of all are the two Michigan men who obtained U.S. patent number 4,216,606 for their invention. It is a mousetrap.

—Paul Trachtman

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Afghanistan: a record of a timeless culture now threatened with change

Isolated by mountains, steppes and deserts, the sturdy Afghans held to their old ways until the Soviet invasion of last December

Afghanistan lies across the legendary land route from the Mediterranean to India, and shares a border with Iran on the west, the Soviet Union on the north, and Pakistan on the east and south; in the northeast it touches China's Sinkiang Province and Kashmir. This remote and strategically placed region has often proved irresistible to aggressors—Genghis Khan and Tamerlane among them—but in the past it enjoyed the protection offered by the great Hindu Kush mountain range as well as by the sturdiness and courage of its inhabitants.

No natural barrier, however, could hold back the arsenal of modern weaponry unleashed by the Soviet forces in mid-December 1979, when Afghanistan was invaded and thrust into the forefront of superpower confrontation. With inexorable swiftness, the old Afghanistan was shattered.

Veteran travelers and photographers, Roland and Sabrina Michaud spent 14 years, through 1979, in Afghanistan, recording a way of life—age-old, classic Islam—that is now in jeopardy. Their experiences and photographs provided the material for their first book, Caravans to Tartary *(1978). The pages that follow are excerpted from their new book,* Afghanistan: Paradise Lost, *to be published this month by The Vendome Press (distributed by The Viking Press). In them we see with glowing clarity the pride, enduring faith and self-sufficiency of a people who, up to this point, remained unconquered.*

Turkestan

The Asia of the steppes is a continental sea crossed since the dawn of civilization by merchants' caravans and conquerors' armies. It could also be called a continent of dust. In Turkestan dust covers everything. Trees, people and all other forms merge in the same tonality: yellow. On trails winding between high cliffs of loess, riders, mule drivers and men on foot stir up clouds of dust the color of pepper. But come spring, lilies, variegated tulips and other bulb flowers come into bloom. For a brief moment the steppes are almost gaudy. The Turks call this joyous moment *eulnek*—the blossoming of the fields—which they immortalized with their invention of woven silk and threads knotted into rugs. The rug that transforms a hovel into a palace or the caftan metamorphosing the country bumpkin into a prince is like the miracle of an oasis—a butterfly pinned onto the gray expanse of the steppes. The Silk Route, the world's most prestigious artery, passed this way.

A winter caravan crosses the steppe of Turkestan.

© Roland and Sabrina Michaud

Shukur Khan, a Nuristani, practices archery to keep up his hunting skills.

Nuristan

"There are clouds today and the panther howls in the mountains," Shukur Khan said as he brought us our breakfast. It was winter, and we were at his native village, in one of Nuristan's valleys, having arrived there on foot after a four-day drive.

Shukur Khan has the open face of all mountain people, whether they live in the Alps, the Carpathians, or the Caucasus, together with the black hair and beard of a Robinson Crusoe. His build is lean, his stride easy like that of a backwoodsman. The outside of his house is decorated with the magnificent horns of *markhor* (wild goat), the highly prized trophy that bespeaks a great hunter. His eyes light up when he talks about his favorite sport, a passion Shukur Khan shares with most of his countrymen. Not only the *markhor* but also the snow panther wanders about this region. In winter, however, hunger often drives wolves, fox and bears to the outskirts of the village.

Dervish

Traditional Afghan society is based on a religious belief that stresses the equality of men before God—not necessarily before other men. But it is always possible for people of different social classes to form close relationships. The merchant in the bazaar does not hesitate to ask your religion. The only sin is to have none. But if you answer that you are a Christian, he gravely nods his head, slowly strokes his beard and, with a satisfied air, announces to his neighbors: "He is one of those who believe in The Book."

Islam has always sought balance in all things. The dervish—*galandat*—is the enigmatic wanderer on the trails of Afghanistan. Pure in heart, this solitary pilgrim thirsting for divine benediction tells a rosary of 99 beads, each bead representing one of God's designations. Over his homespun garment he sometimes wears a *muraqqa*, a patchwork coat made up of 99 pieces symbolizing the world's illusions. In its westward journey to Sicily, this was the garment that became Harlequin's costume. Ask the dervish where he has come from and he will raise his eyes to the sky. Ask him where he is going and he will answer: "We are going from God to God." Sometimes he will stop at a teahouse and, as a memento of his passage, scrawl on the wall the word that expresses his innermost thought: *Migozared* ("Everything passes").

Top: A young girl of the Baluch tribe in Nimruz. Middle: A dervish in Mazar-i-Sharif. Bottom: Master blacksmith who plies his trade in a bazaar.

The sand-swallowed ruins of Shar-i-Gholghola in the Nimruz desert.

Nimruz

With only two seasons, Nimruz is brutalized by variations in temperature. From April to November, it is a furnace; from December to March, the temperature can drop to –20 C. Whichever the season, the climate's chief characteristic is wind. Although this can reach a force of 120 miles an hour its benefits outweigh all inconveniences. In summer, the wind cools the houses as it blows through screens laced with dampened thornbushes that cover doors and windows.

Suffocating heat, insufficient rainfall and thick incrustations of salt have rendered most of the land sterile. "Yet," a man says, "wherever you can introduce water the soil is very fertile. Our ancestors mastered the science of irrigation and the art of gardening." His ancestors were the Tajiks. Near the dawn of civilization, they produced engineers of uncommon talent who were able to conceive and execute a vast network of irrigation canals. Subterranean conduits brought water to agrarian centers.

To reach fortified Nimruz, the traveler drives over gray rubble, zigzagging through a labyrinth of crescent-shaped dunes more than 100 feet high. It was the wind that made these great ridges, resembling a succession of surging waves frozen in midmotion. But their immobility is only an illusion, for the wind moves them ten inches a day. Called *barkane,* or "marchers," by the Nimruz, the dunes have great destructive power, swallowing roads, ruins and anything else that stands in their way. Shar-i-Gholghola (above) is a city risen from the sand. Impressive remains bear witness to great empires long since gone, making a macabre boneyard that still haunts men's memories.

A mule driver rides down a side street of Tashqurghan in the spring.

Tashqurghan

Spring is the time when people come to the village of Tashqurghan (above) for the partridge fights. Partridges—*kaouk* in Persian—are very common throughout Afghanistan. The village people catch them young with nets as the birds come to the mountain springs to drink. But they are caught neither for their delectable flesh nor for the beauty of their voices. Afghans capture partridges—and males only—in order to train them for battle. Once the fowl have been caged in their handsome wicker enclosures, these are covered with a blue cloth made by a local tailor, especially colored and decorated with tie-dyed white circles and lines (p. 56). The shrouds are designed to protect the birds from insect bites, dust and cold. Then begins rigorous training to toughen the birds.

Fights are scheduled on Tuesdays and Fridays—at dawn to avoid the heat of the sun. The villagers begin to arrive, solemnly carrying their shrouded cages, the silence broken by hundreds of muffled partridge calls. Two umpires, one for each bird and both responsible for the conduct of the fight, enter the circle, remove the cages' coverings and the detachable bases. The birds are now alone in the arena. Immediately, they engage one another boldly, beaks pecking, wings flapping, each trying to dominate the other. The spectators—only male adults and children may attend—cheer their favorites on. Partridges never fight to the death. Once a combatant starts running from his pursuer, the fight is over.

The spectacle of man, bird, earth and sky against the backdrop of Central Asia's imposing mountains is not soon forgotten.

The Pathans

Half in Afghanistan, half in Pakistan, live 12 million Afghans called the *Pushtun* or, by the English and Indians, Pathans. They conquered Afghanistan in the 18th and 19th centuries. Overflowing the southern and southeastern parts of the country, they spread to the west, center and north. Wherever they went, the Pathans elbowed out the indigenous people, forced them off their best lands, and generally acted like feudal barons. Now, representing the dominant ethnic group in Afghanistan, they occupy virtually every post in the government and administration. But they are also large landowners, shopkeepers, peasants and even truck drivers.

The Pathans are Indo-Europeans of a tall, lean build, their color swarthy, hair sleek and black, noses strong. They wear thin mustaches, use kohl around their eyes, often wear a gold ring in one ear, and sport magnificent turbans tied to resemble cockscombs. Vests threaded with gold are worn over embroidered white shirts, trousers are very full, and sturdy boots curl up at the toes. Usually armed with a rifle and festooned with cartridges, the Pathan looks very dashing.

Afghanistan has every form of nomadic life; indeed, it is the last refuge of the great nomads. The Pathans number two million nomads, and since time immemorial these have been moving their flocks from summer pasturage on the high plateaus of the Hindu Kush to winter quarters on riverbanks as far distant as the Indus in Pakistan. For them, seasonal movement between upland and lowland—transhumance, it is called—is a vital necessity. The flock is the determining factor, for it must at all costs find food.

A Pathan camp set up during migration is a memorable sight. At dawn wisps of blue smoke rise from the conglomeration of black tents resembling bats—the Persians call them leather butterflies—that hug the dun-colored hills (below). Around the camp slender, supple women with a wild beauty and warm laughter walk barefoot, their features masked by mysterious tattoos, heavy silver ornaments around their necks, their red dresses billowing out in the wind.

When camp is struck, the tribe starts marching slowly through a breathtaking landscape under starry skies, the cavalcade accompanied by the baaing of sheep and the bleating of goats mingled with the curious roar of camels and the barking of dogs.

A camel driver returns to a black-tented Pathan camp with forage.

Pathan horseman rides through the snow in the region of Ghazni.

Potter displays his wares in bazaar of Qizil Ayak.

Cages of fighting partridges are covered to protect birds.

Bazaars

All the ethnic strains of Central Asia rub shoulders in the bazaars. Look and listen closely, for the bazaars are the repositories of traditions a millennium old. Only by frequent and diligent visits to the markets can the foreigner learn the secrets of Afghan life. If you would penetrate deeper into the ways of the bazaars, you must patronize the shops. The druggist sells mysterious herbs, condiments, cosmetics and dyes. The fruit dealer polishes his apples and pomegranates until they gleam like rubies, then piles them into perfect pyramids. In front of his modest stall, Master Kebabi grills succulent pieces of lamb on skewers over charcoal, alternating the lean meat with the fat, which the customer can season either with the juice of bitter oranges or with a powder made of dried mulberries. If you wish to know how to remove the smell of goat from your newly purchased goatskin bottle, you will be told to keep filling it with water mixed with mud and chopped straw for three days. Or do you wish a shave and a haircut? A visit to the barber is always instructive. According to an old saying: "The barber's wisdom and breadth of soul are greater than the wisest and most powerful of men, for his hand has held the heads of kings."

View of Herat from a minaret of the Great Mosque.

Herat

When mule drivers reach the point where the path turns into an alley of dark pines, they know they have arrived at Herat. This city of beaten earth enclosed in an area a mile and a half square is divided by two streets that carve the city into four sections. Dominated by a citadel built of dried mud, Herat is the eternal city risen seven times from its ruins.

Mosques, Turkish baths, bazaars, caravansaries and mausoleums testify to its vitality. At the base of six truncated minarets, a dome coated with enamel bluer than the sky resembles an exotic fruit bursting from an excess of sugar. The city may be only earth and mud, yet it conveys a sense of grace and courtesy. Men speaking a Persian from the Middle Ages greet each other, hand over the heart.

In the yellow dust raised by the jingly *gadis* decorated with red pompons, the smells of a distant Orient stir memories of the invasions, tyrannies, carnage and resurrections that have marked Afghanistan's history. Intellectual and artistic capital of the country, Herat is justly proud of its Great Friday Mosque (right, above) and the city's patron saint, Khwaja Abdallah Ansari (c. 1006-88).

By the tenth century, the Great Mosque had already begun to attract scholars and philosophers from all over the Islamic world. Today it is being lovingly re-

Dervish carries burning seeds to ward off evil eye.

stored with funds raised by a special tax on sugar. Thanks to these efforts, the structure gradually reassumes something of its ancient splendor.

It was in this mosque that young Abdallah Ansari lived among the saints and doctors of law, his reputation continuing to grow until his death at the age of 82. His tomb at Gazargah, three miles from the city, is much frequented by pilgrims. Surrounded by gardens, pavilions, a reservoir, a cemetery, a guesthouse and mosque, this complex shelters a religious order made up of the saint's descendants who devote their lives to meditation and the dissemination of the master's teachings. It functions as an asylum as well, providing, in the medieval sense, a safe haven for the criminal seeking refuge from the law.

As winter arrives, a dream city emerges mantled in snow. In the biting cold, families gather around their *sandali*, a low table covered with an eiderdown, and stretch their legs against a brazier that gives out a comforting warmth. They eat bread with a thick grape syrup, and drink hot black tea. Colds and coughs are treated with infusions of quince seeds.

When the snow melts, streets become a quagmire. Heratis are so bespattered by passing *gadis* that they fill the public baths. Finally spring comes. Migrating birds form wheeling clouds in the sky; children fly their kites. On Friday (the Islamic day of rest) families take picnics to the *ziarats*—the tombs of the saints—and feast on grape cheese.

In the gardens, pomegranate petals fall like snowflakes. Rich Heratis repaint their brass-studded doors the color of paradise. Behind these doors, they live out their idea of paradise in a closed world of simplicity and serenity. In teahouses, the men sniff pink roses and smile as they watch their wives go by, swathed from head to foot in their pleated *chadri* whose colors repeat the ocher, mauve and blue-gray of the hills (right). Women see the world filtered through the embroidered *musharabieh* that cover their faces. The Koran says: "They will have beautiful women with large black eyes, women beautiful like carefully hidden pearls." They go about veiled the better to make men dream.

Then comes summer. From June to September, the wind has the sound of the sea and causes the pine trees to moan. Coming from Nimruz, it turns the city into an ocean of swirling dust. Yet without it life would be hell. It blows away insects and epidemics, and tempers the terrible heat. Heratis eat salted cucumbers, sometimes mixed with yogurt, drink green tea, and take long siestas. Thus, the cycle begins again.

Herati women in *chadri,* faces behind *musharabieh.*

Cadillac announces V8-6-4 Fuel Injection

As you drive, the 1981 Cadillac automatically goes from 8 to 6 to 4 cylinders.

GM Cadillac

CADILLAC MOTOR CAR DIVISION, U.S.A.

Is V8-6-4 Fuel Injection standard equipment?
Yes, the V8-6-4 fuel-injected engine is the standard gasoline engine for all 1981 Cadillacs.

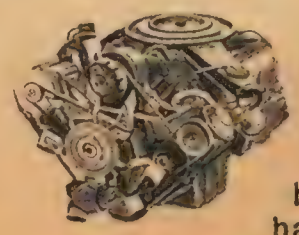
How does it operate?
As you leave your driveway, all 8 cylinders in your gasoline-powered 1981 Cadillac are in operation. Then, as you reach intermediate speeds on a street or avenue and your power requirements lessen, the car automatically switches to 6 cylinders. And then, when you reach cruising speeds and your power needs decrease further, the car automatically switches to 4-cylinder operation.

Does any other carmaker offer anything like this?
To our knowledge no other carmaker offers it—foreign or domestic. It serves as a prime example of American innovation.

It sounds complicated—is it?
No. It's surprisingly simple. The on-board digital computer of the Digital Fuel Injection system senses the power requirements of the engine and closes off two, four or no cylinder valves, depending on those power needs. Then, as your power needs change, it opens fuel valves.

Can you feel the car going from 8 to 6 to 4 cylinders and back again?
Some people can. Some can't. The perceived sensation is slight. Because, in a sense there is no shifting. Fuel valves simply close or open as instructed by the computer.

The idea of 4 cylinders in a Cadillac bothers me—should it?
No. The system only goes to 4 cylinders when your power needs are relatively low. To pass another car, push down on the accelerator and the system instantly goes into 8 cylinders for added power. Then, as your power needs decrease again, the system will return to 4 cylinders.



How reliable is it?
This system has been proven in over a half-million miles of testing. It's *that* reliable. All electronic components are solid-state, including the digital computer itself.

Is this the same as overdrive?
No. Overdrive is a function of gears. V8-6-4 is a function of the number of cylinders receiving fuel. By way of interest, overdrive is a feature associated with the V6 engine available on 1981 Fleetwood Broughams and DeVilles.

Cadillacs are equipped with GM-built engines produced by various divisions. See your Cadillac dealer for details.

Can I tell how many cylinders are active at any given time?

Yes. Push a button and Cadillac's MPG Sentinel on the instrument panel shows a digital display of the number of cylinders active at that moment. The MPG Sentinel will also show instantaneous mpg and average mpg.

Is it true that this combination could help a person to become a more efficient driver?
Absolutely. Knowing your active cylinders and instantaneous mpg can help you adjust your driving habits accordingly. And thereby help you become a more efficient driver. You can further demonstrate it to yourself by resetting the MPG Sentinel before a trip. Then push a button at trip's end and the MPG Sentinel will tell you how well you did by displaying your average miles per gallon to the nearest tenth.

All this is standard in 1981?
All this and more. Buy or lease, see your Cadillac dealer for a test drive.

Trust Cadillac to lead the way.

By James Malcolm

African wild dogs play every game by their own rules

They pass traditions from one generation to another, males and females reverse roles and all adults cooperate to feed the pups

After an unsuccessful morning's hunting, the four dogs of the Genghis pack headed back to the 13 pups they had left in their underground den two hours earlier. Even as they returned, they searched for their preferred prey, vulnerable wildebeest calves. It was, as usual, the two younger dogs, a male and female in their prime at four years of age, that trotted ahead of the remaining two, a pair of eight-year-old brothers. Suddenly the two older dogs gave chase to a mixed herd of adult wildebeests and zebras, and it was soon clear that they were not interested in the smaller and more harmless wildebeests but were instead tackling the zebras—a prey nine times larger than the dogs, and which could ably defend themselves with both hooves and teeth.

After a mile's hard running, the dogs were close on the heels of eight zebras, and as they galloped up a steep slope, one of the zebras started to lose ground. At once, one of the dogs leapt to grab the zebra's tail. On his third attempt, he succeeded, only to be dragged along as the animal frantically tried to regain its group. As the zebra slowed, the other dog began to

Two African wild dogs greet by "mouth-lapping," action probably derived from soliciting food as pups.

On the Serengeti Plains, a pack attacks a zebra foal. Dog at center immobilizes prey by holding its lip.

lunge at its head. Suddenly, with a sharp buck, the zebra threw off the dog on its tail, and sped away from the dog at its head. One dog continued the chase but finally gave up when the animal rejoined its band.

The two younger dogs, which had led every hunt for weeks, took no part in the attempt. As soon as it became clear that the two old brothers were chasing zebras, the female had trotted directly to her pups, ignoring the apparently futile endeavor of the males. The young male remained, but as little more than a spectator, keeping careful distance between himself and the action.

Why did the old males ignore the wildebeests and try to pull down a zebra? Why did one of them bite at the zebra's head? And why did the younger adults, the pack's main hunters, play so small a role? None of these questions could have been answered without the eight years of research that preceded the small incident described. Not only were the dogs known individually, but many of the details of their lives were on record. It is from these details that the questions can be answered.

The dogs forming the Genghis pack were African wild dogs, also called Cape hunting dogs or simply wild dogs. They form a separate species that diverged from the ancestors of the present-day wolves and jackals between two and three million years ago, and they probably cannot now breed with any other member of the dog family. In their habits and behavior, however, many close parallels to wolves remain. They lack elegance but their large ears function simultaneously to hear, to accentuate facial expressions, and as cooling surfaces; their heavy muzzles contain an impressive array of teeth with an unusual number of knifelike edges for cutting flesh, and their short hair also acts to prevent overheating.

Most interesting are their unusual social arrangements. The males provide most of the care for the young, for example, and it is usually young females that leave a pack and try to form new ones.

They once ranged over most of Africa outside the equatorial forest zone. They have been found several hundred miles into the Sahara but have not occurred in North Africa in recent times. They apparently avoid tracts of continuous forest but are found in most other habitats, from savanna and plains to the alpine plateau of Mt. Kilimanjaro at 14,000 feet. For reasons that are still not clear, they are never plentiful, and

The author studied wild dogs from 1970 until the end of 1977. After a stint at the National Zoo, he is in Kenya doing research on bat-eared foxes.

Lead dog catches a wildebeest calf by the hind leg as its mother continues to run at far left. Pack

despite a range that still extends from Sierra Leone in the west to Somalia in the east and Botswana in the south, probably fewer than 7,000 are alive today.

The Genghis pack is the best studied in all Africa. It played a central role when Hugo van Lawick began a long-term study of African wild dogs on the Serengeti Plains of Tanzania in 1967. I began my work under him in 1970, sometimes spending 24 hours a day near a den for days on end so that as little as possible would escape me, and went on to work on my own, off and on, for the next eight years. We have now learned enough, we believe, to understand behavior such as the hunting incident described above.

A dog offers not a threat but only a yawn to the camera. Its teeth are specially adapted for cutting.

When the two old brothers, the dogs that tried to bring down a zebra, were born into the Genghis pack, it contained 12 adults and this large group regularly killed zebras. At the height of the pack's prowess, just when the two brothers were growing up, the pack was even known to kill two zebras simultaneously with as few as four dogs cooperating closely together in a successful attack. Once a zebra was singled out and slowed, one dog would catch hold of the fleshy upper lip (pp. 62-63). Only certain dogs in the pack performed this dangerous task, which involved lunging up toward the zebra's snapping jaws. As soon as the dog had a secure grasp, usually after a number of attempts, the victim would cease its thrashings and stand quietly as the rest of the pack dispatched it.

The two old males not only remembered how to hunt these large prey but could still execute most of the actions. The old male that attempted to hold the lip had been, seven years earlier, the first member of his litter to grab zebras that way. In the intervening years, the pack had dwindled, and by the time the younger male was learning to hunt, the Genghis pack seldom if ever attacked zebras. The young female had joined the pack only 18 months earlier, and her parent pack was not known to have hunted large prey.

Each pack on the Serengeti hunts over an area of about 650 square miles, and the range of the Genghis pack fell in the center of the 2,500-square-mile short-grass plains. For the five months of the rainy season,

first separated the mother and calf from the rest
of their herd, then, in turn, managed to split the pair.

these plains are grazed by one-and-a-half million ungulates, two-thirds of them wildebeests. Their calves form the bulk of the wild dogs' diet. When the rains end, however, the short grass quickly desiccates and the herds migrate to richer pastures. The dogs do not follow, and in the dry season the Genghis pack has to survive on the faster and more wary gazelles that tolerate the harsh conditions.

Their distinctive individual coat markings and regular daylight hunting, as well as the short grass of the Serengeti, make the dogs easy to study. On the other hand, the large areas over which the dogs travel, often at night, and the low total population—as few as one adult for every 100 square miles—counteract the advantages. Using cross-country vehicles, it is easy to follow a pack trotting across the open plains in daylight. At night it takes the complete concentration of two people: one to avoid the myriad axle-breaking holes (most of them the work of animals, from spring hares to hyenas, that live underground), the other to keep the dogs in view. Most of the night-following has to be done in complete darkness, as the spotlight dazzles and disorients most animals. Lory and George Frame, who played a large role in the study of this same pack in Africa, sometimes could follow dogs for as many as seven nights in this way, until eventually exhaustion would force them back to their base.

At night it is seldom possible to record more than the path a pack traveled and the prey it killed. More detailed and extensive observations can be made only when a pack's wanderings temporarily cease, following the annual birth of a new litter. For three months, until the pups can keep up with the adults, the group will remain in one small area.

The den of the Genghis pack has been found and watched seven times in 12 years. In this study, no dog lived for more than 11 years, so none of the dogs present at the first den of the Genghis pack was alive 12 years later. Genghis, an old male who led the pack when it was first seen, died three years later. Despite the complete turnover in individuals, the pack had remained a clearly identifiable group defined by its

A wild dog drives off a much larger spotted hyena;
the hyena has probably come too close to a pup den.

Hungry adults stand aside at left while four-month-old pups stuff themselves at a kill. If the pups eat

Four-week-old pup carries off almost more meat than it can handle. Caching occurs but is not common.

Here a mother regurgitates a meal for her pups. Adults will do this three or four times after they eat.

male lineage. When Genghis died, his sons or nephews were prime-age adults, and by the end of the study Genghis' great-grandchildren were growing up. Throughout the study it appeared that the continuity of all packs was maintained through the male line.

It is these male kin lines that carry the traditions of a pack. The young dogs learn the important features of the area over which the group ranges, such as sources of water to sustain them during the dry season. Perhaps most important of all, the young dogs learn which animals are suitable prey and how they can be killed. On one occasion the Genghis pack, which had been known to kill warthogs, came across a bushpig—an animal smaller than a warthog and reputedly less ferocious, which is hunted by wild dogs in other parts of Africa. The bushpig was, for some unknown reason, crossing the open plains at least 15 miles from any suitable habitat. The pack approached the strange beast, and a group of one-year-old pups even snapped at its heels, but it was clear that the adults were not prepared to attack. Similarly most packs, even very large ones, usually did not attempt to hunt zebras. In fact, most packs would conscientiously avoid herds of zebras for fear of encountering a stallion that would defend his harem by chasing off wild dogs that came too close. As the Genghis pack demonstrated, however, once a large pack acquired the ability to hunt zebras, as few as four dogs could perform the task.

Group hunting performed mainly by bands of related males lies at the core of the wild dogs' existence. Although on the Serengeti Plains there was little evidence of ambushes or other elaborate hunting

everything, the adults will kill again. When the pups are about a year old, adults begin to eat with them.

strategies, the cooperation between pack members was still impressive. Probably the most critical part of a hunt is deciding which particular animal to pursue, and the dogs must be highly adept at spotting an individual gazelle or wildebeest that is a fraction slower than its fellows or shows some other sign of weakness. Once a quarry is selected, the chase begins with the dogs accelerating to almost 35 mph at full stretch. The leading dog expends the most energy and must follow every twist of the prey while those behind can cut the corners. If the leader slows, it will fall back and another dog will move up to take its place, leading the chase. The dogs are able to maintain their top speed for about three and a half miles.

The subtle coordination that usually exists between pack members was made clear when two sisters joined two males to form a new pack. It was obvious that the two males were not accustomed to keeping track of the two females in the hunt or vice versa, and often the two halves of the pack would end up pursuing different animals. In such a case both groups might fail where all four dogs concentrating on a single quarry might have succeeded.

Not only do the adults in a pack cooperate to kill their prey, they also share food between group members. Even if a particular dog lags in the chase or is distracted pursuing another animal, it is allowed to feed from the kill. In 1973 Brutus, a male in the Genghis pack, broke a hind leg and could only hobble along behind the pack, but throughout the time the fracture was mending he was given free access to food as soon as he arrived at the site of the kill.

Among wild dogs, unlike most other mammals recorded to date, it is the males rather than females that play the major role in raising the young. All the adults in a pack help to rear any pups that are born, and as males outnumber females, their total contribution is the greater. Among the fully adult wild dogs on the Serengeti, males outnumber females by two to one. Among older dogs the disparity is even greater, with four males to every female in dogs over seven years old. The composition of the Genghis pack in the zebra-hunting incident—a single female with a group of related males—is typical. Some packs have as many as eight adult males with just a single female, but three to five males is more common.

Young wild dogs are completely dependent on adults for at least the first year of life, and probably get more than half their food from the adults until they are 14 to 18 months old. It is only in the first weeks of the pups' lives that adults other than the mother do not provide direct care. The pups are born underground where they remain feeding exclusively on their mother's milk until they are about three and a half weeks old. Even at this time pack members will provide food to the mother.

Protecting the pups from predators

As soon as the pups begin to come out of the den, the adults, especially young ones, show an intense interest. They rush to the mouth of the den when the pups appear and proceed to sniff, nuzzle and clean the pups, which are often bowled over in the overflow of enthusiasm. More substantive contributions come in the form of food and protection from predators. All adults chase predators from the area of the den, especially spotted hyenas, which are the greatest menace. Hyenas on the Serengeti Plains outnumber the dogs by as much as a hundred to one. In addition, they are more than twice as heavy as the dogs and are reputed to have the strongest jaws of any animal in Africa (SMITHSONIAN, June 1975). Apparently, it is the close cooperation among the wild dogs that usually allows them to dominate the hyenas. As one dog distracts the animal at the head, another can usually plant some sharp bites on the hyena's rump. Most hyenas that stray within 50 yards of the pups are chased, as are cheetahs, jackals, wildcats and other, smaller carnivores. In addition to this direct protection, one or two dogs often stay with the pups when the rest of the pack hunts, a job that usually costs them a meal.

More than 90 percent of the solid food that a wild dog pup eats in its first three months of life comes from the stomachs of the adults. Like some birds, and other members of the dog family, African wild dogs

Here a nursing mother lies on her side in submission to a dominant sister, which may try to steal pups.

Once pups are about three weeks old, the mother starts nursing outside the den, standing up. The little ones begin to eat meat now, will start to be weaned at seven to eight weeks, eat only meat by 11 weeks.

Grinning jaws and laid-back ears are signs of submissiveness, part of side-by-side greeting ritual.

feed their young by regurgitation. Within six hours of a good meal, each adult will usually have produced one to two pounds of semidigested food. One generous individual regurgitated 11 times after a meal, while others were seen feeding the pups as long as 14 hours after a meal.

Occasionally the adults will kill an animal very close to the den, and the pups may follow the adults to the carcass. As soon as the pups arrive the adults stand back to let them feed, and will only resume their meal when the young ones leave. The Genghis pack in 1969 had only one pup surviving from a litter, but this individual was allowed to eat by herself as the 12 adults stood aside. The complete feeding priority is maintained through the first year, and is a daily event after the third month when the pups are following the adults as they hunt. Pregnant and lactating females are the only other dogs given similar access to food. It is at the end of the pups' period of dependence that the adults' contribution is greatest because of the large amount of food consumed by the young dogs. By that time the pups have reached almost adult size, and they frequently outnumber the adults in the pack.

Often a new litter is born before the last is fully independent. If the new pups appear in the rainy season there probably will be enough food for all, but in the dry season resources are severely strained. In this situation it is the year-old dogs that seem to benefit most, as they can still feed from the carcasses but may stop regurgitating to the pups to keep food for themselves. In one extreme case they actually stole from the pups food that had been regurgitated by the adults. This could not go on for long, and within a week the pups perished.

With the prolonged burden of post-weaning care carried mainly by the males, the normal female role has been transformed among wild dogs. For the great majority of vertebrates, the number of offspring a female can raise is limited by her ability to produce and nurture them, while males (their contribution often is limited to a single microscopic sperm cell) can increase the number of their progeny simply by fertilizing a larger number of females. And, in evolutionary terms, the number of surviving young is the final yardstick of success. For mammals in which females not only gestate their young but also provide them with milk after birth, male participation is even less likely than in animals such as many birds and fish, where males can play a role in protecting the eggs and feeding young. Without the demands of raising their offspring, male mammals usually leave the group or area in which they were born, and, most often by open conflict, try to acquire mating rights over a number of females.

For wild dogs all these generalities have to be reversed. Not only do females play a reduced role in post-weaning care, but it is also the females that leave the group in which they were born. Usually a group of littermate sisters will emigrate together and may form a little all-female pack while they travel in search of unattached groups of males. Two such groups joined the Genghis pack over a ten-year period. The first group comprised six female dogs while the second had only three.

No place for females to go

Although females emigrate and join packs in groups, it takes only a single adult female to occupy the reproductive effort of all but the largest packs, because female wild dogs produce comparatively huge litters. On the Serengeti, the average litter size is ten, and the largest litter numbered 16. By contrast wolves, jackals and other closely related species give birth to only six or seven pups at a time. Rivalry among the females to monopolize the breeding is intense, but once a dominant female is established, she is seldom if ever displaced.

The options for subordinate females are limited. When six females joined the Genghis pack, two of them left together after only a short time, presumably in an attempt to find another group of males. Two of the other females tried to form small independent splinter packs, each leaving the parent pack in the company of one of its males. These isolated pairs failed to raise pups and the males returned to the Genghis pack within a few months. The females were never seen again.

The final option for a subordinate female is to

attempt to breed in the presence of the dominant female. This almost always leads to a severe and prolonged conflict between the females. It appears that the dominant female attempts to take complete control of all the pups and will kidnap the subordinate's pups and take them to her den. The subordinate resists, and the unfortunate pups often are literally pulled in two directions at once as the mothers tug from either end. An extreme case of such a conflict in the Genghis pack in 1970 was recorded in Hugo van Lawick's book *Solo*. The subordinate female gave birth about a month after the dominant's litter had been born. Starting the day after the birth of the new litter, the dominant female would stalk over to the subordinate's den and try to steal the pups. The subordinate, left without food because of her constant vigil and because the food resources of the pack were being directed to the other female's pups, finally weakened and let the dominant animal get to her pups. Half-starved and dragged around by the dominant female, the little pups did not last long, and within only three weeks there was only one left, which was raised with the larger litter.

The warring females end up with gaping wounds. The pups also suffer, both from being pulled around and from lack of food, when one female, for fear of losing control, stays underground until her milk supplies are affected. It is not surprising that subordinate females disappear and the only stable packs are those with just a single adult female. Most of the outcast females must die, and it is this mortality, combined with a minority of females at birth, that accounts for the overall preponderance of males.

The wild dogs living on the plains of Africa evolved at the same time and in the same place as another social carnivore—Man. For both species cooperative hunting, primarily by males, extensive food sharing, and a dependence on traditional rather than biologically inherited information were important factors in their development. Among humans, however, there was a difference in that cooperative efforts often were specific to each sex. Women usually cooperated to gather fruit and vegetables, while the men cooperated to bring home meat. Nevertheless, cooperative food getting and the establishment of traditions are the core of both wild dog and many human societies. In

When not active, the pups—alert here with ears up—huddle together for mutual comfort and security.

Their numbers dwindling along with their range, the adults and pups face an uncertain future in Africa.

another parallel with wild dogs, the great majority of known human cultures denote descent through the male line.

For 1.95 of the last two million years, wild dogs and humans have lived together, competing to some extent for the same prey. Despite mutual antagonism, they have coexisted. In the last few thousand years, however, the balance has tipped dramatically in favor of Man. First, with the coming of agriculture, particularly pastoralism, the native grazing animals were replaced. More recently, with the advent of fencing, firearms and human expansion, vast parts of the wild dogs' range have been eliminated. The huge areas over which packs roam mean that only the largest national parks and reserves can maintain healthy populations. Even in these places they are not completely safe, as some of the old antagonism persists, and some wardens—at least until recently—would kill wild dogs on sight, believing them to be the ultimate scourge of game animals. The dogs also die from natural causes, particularly disease and competition with the larger and more numerous spotted hyenas. These factors have all combined to put wild dogs on the list of animals vulnerable to extinction. After five years when hardly a single wild dog pup survived on the Serengeti, however, there has been a reversal, and within the last two years the population has started to grow again. The Genghis pack is still too small to tackle zebras, but perhaps with a few pups surviving the tradition will persist.

RECALL THOSE GOLDEN MOMENTS

Give Her a "Golden Moment" Hourglass Pendant— An Exquisite Gift of Rare Beauty which uses Gold dust to Dramatically Express Your Everlasting Love.

Especially appropriate as a gift at Christmas-time — from husband to wife — or from father to daughter.
The perfect gift for Anniversaries and Birthdays — or any time you want to say "Thanks for the Memories."

For most of us the "golden moments" in life are rare — and there are usually certain moments that we remember most — those which we share with someone very special.

Here's a way — a beautiful and thoughtful way — that you can recall and commemorate the Golden Moments you have shared with her — and at the same time, create a *new* golden moment which she'll never forget.

It will happen the moment you present her with your gift of her "GOLDEN MOMENT" Pendant.

This exquisite piece of original jewelry is designed in the form of a miniature Hourglass made of Pure, Solid 18 Karat Gold. And, it uses genuine placer Gold dust to measure time — and each "Golden Moment" that you will share with her in the future. The outer framework of the Pendant is delicately fashioned to the contour of an Hourglass. The actual hourglass, which contains the Gold dust, is mounted on a pivoting Gold yoke and can be easily turned to reverse the flow of gold and start the passage of another new "golden moment."

The Gold dust used in this unique piece of Collector Jewelry is taken from the creek beds and streams located in one of America's oldest and most famous gold mining districts — "Gold Hill" — near Boulder, Colorado. It is slowly and painstakingly "panned" by hand in the very same way that Rocky Mountain prospectors have been collecting gold dust and nuggets ever since the Gold Rush Days in 1849 — for over 130 years.

The Hourglass shape has long been the symbol of eternity. So, a gift of this lovely Hourglass Pendant is a tender way to express your everlasting love. Whenever she wears this unique Pendant, she'll remember those shared "moments" and smile. And, after all — what pleases a woman more than the sentiment expressed with gifts of Gold and Diamonds. Whenever she wears it, it will start conversations — and give her a chance to tell others about the wonderful memories it represents.

RARITY ASSURED — NOT AVAILABLE IN STORES

To assure the rarity, the Limited Edition version of these extraordinary Pendants is being restricted to just 2,500 pieces, worldwide. They are being issued exclusively through our organization, the Limited Editions Collectors Society of America, and are being offered to collectors of fine, handmade jewelry, and to those individuals who are seeking truly unique "Collector Jewelry" pieces for gift-giving.

The design (which is protected by a copyright) was created at the J. T. Inman Goldsmith workshops. Perhaps you have already heard about, or seen, some of the other original creations which have been handmade at Inmans. They are a small "specialty" jewelry model shop, located in Attleboro, Massachusetts, that has been designing and making unique, fine, handcrafted "specialty" jewelry since 1882, serving clients such as Tiffanys, Cartier, Neiman Marcus, Shreves, Halls, and other fine jewelers for many years.

These extraordinary Pendants were created by Inman's designers exclusively for us, for sale to members of the Collectors Society and to other collectors interested in participating in this Limited Edition offer. They will not be sold through retail jewelry stores or department stores, and the *only* way to obtain them is by responding to the Society's advertisement.

A Registered Edition is also available in 14 Karat Solid Gold or Gold Vermeil (Solid Sterling Silver plated with Gold). However, when the Limited Edition is completed and sold out, all dies and molds will be destroyed, and both Editions will be closed forever.

The Registered Edition can also be purchased without a Diamond — at a much lower cost. In fact, you can own one of these remarkable Pendants for as little as $125.00.

1,000 pieces of the Limited Edition have already been allocated to fill the orders which are expected as a result of a private offer being sent to the Society's own membership list. This group now numbers in excess of 10,000 serious collectors, nearly half of whom have been subscribers to our previous offers of unique "Collector Jewelry."

The remaining 1,500 pieces in the limited issue are being offered to the general public in advertisements such as this one, which are appearing in a number of national publications that will eventually reach over 10 million affluent readers.

We offer you an opportunity to be among the very first collectors who will obtain this new Limited Edition piece. It makes a wonderful gift for birthdays, anniversaries, and other important "special" occasions. It not only makes a unique, charming, and thoughtful gift, but it is one of the finest, and the most *meaningful* that you can ever give when you want to tell someone how much you care about the moments you have shared with her. It's the perfect Christmas gift.

AN EXCEPTIONAL VALUE — INDIVIDUALLY HANDCRAFTED

The Pendant is sturdy and solidly constructed, yet it is very comfortable for her to wear. Its sparkling 10 Point, round-cut Diamond is mounted into a deep, firm "setting" to make sure it is secure. The placer Gold dust is permanently sealed into the pyrex Hourglass and cannot be lost.

Glass contains genuine placer Gold dust
Shown here enlarged: Actual size 1½ inches
Outer Frame and Yoke: 18 Karat or 14 Karat Gold, or Gold Vermeil
10 Point Genuine Diamond

The Hourglass — symbol of Time and Eternity — Fashioned of Pure 18 Karat Gold, Uses Gold dust to Measure the Golden Moments you spend with her.
And, the Gemstone — a Genuine 10 Point Diamond — is Forever.

It will maintain its golden glow for endless moments — forever.

You will be able to tell her that her Pendant has been individually hand-crafted, cast by skilled goldsmiths, and then hand-assembled and polished with the utmost meticulous care. Seventeen separate hand operations are required to assemble each and every Pendant prior to the final inspection by the Master Goldsmith. Every Pendant comes with a 12 Karat Gold-filled Chain, 24" long, which she can easily adjust for casual or dress wear.

Every "Golden Moment" Pendant is an extremely outstanding jewelry value. Many ordinary Pendants — with little to no sentimental meaning — having the same weight content of Gold, cost considerably more. You can verify this by going to any jewelry store to examine the prices of the wide variety of the factory mass-produced pendants that are available. You will find that many of them cost more, and that most cost much more, than the "Golden Moment" Pendant. However, none will have our Pendant's unusual combination of hand-craftsmanship, rare beauty, unique design — or its most important feature — its impressive "sentimental" significance.

There is a simple explanation for this outstanding Pendant value. The Limited Editions Collectors Society makes all of its exclusive offerings *directly to the public*. Its products are not distributed through retail stores, catalog houses, mail-order marketing syndicates, who must add "markup" to the items they purchase for resale.

Because of the very small quantity of Pendants being offered, if you wish to share a new "golden moment" with the special person in your life and commemorate those important golden moments in your past, we strongly recommend that you act promptly by mailing us your order using the coupon below, without delay. Or, better still, to be *sure* that your Pendant is reserved for you, *call us at our toll free number* - 800-225-5252 — to place your reservation before mailing your order.

OUR UNPRECEDENTED, EXTENDED GUARANTEE

Every Pendant in both the Limited and the Registered Edition is unconditionally guaranteed. We invite you to examine this unusual and distinctive Collector Jewelry piece, without any obligation whatsoever. Look it over. If you are not completely satisfied, when it arrives, send it back for a full refund. (We'll also reimburse you for whatever it costs for postage and insurance to return it.) Or, even after you have presented this stunning Pendant to that special person, if you find that she is not totally pleased, we will buy it back. In fact, due to the very limited availability of these Pendants, we will be glad to re-purchase yours any time within *one full year* from the date of your order. After all, in the long run, we don't expect Diamonds or Gold, or Gold dust or Silver to lose their value — they never have.

There is another advantage to this extended one year guarantee. You may acquire your Pendant *now — before the Edition is closed* — and still present it as a gift at a later date — such as the upcoming Holidays, an Anniversary or birthday that is still many months away or as late as Valentine's Day or Mother's Day in 1981.

The Collectors Society is a private organization, founded by a group of avid collectors, art lovers, and historians, including some who have distinguished themselves in the fields of Arts and Letters. In addition to creating and marketing unique and exclusive fine Collector Jewelry, the Society also issues authentic reproductions and replicas of historic artifacts, plus exclusive artworks and official Commemorative products. It has received a number of important awards for excellence and has been commissioned by a number of non-profit organizations, including the Winston Churchill Foundation, the Freedoms Foundation at Valley Forge, the Old North Church Museum, and the John F. Kennedy Library Fund, to create and market their official commemoratives to collectors.

Every collector item issued by the Society is protected with a Certificate of Authenticity signed by the Chairman of the Board of Trustees of the Collectors Society. Your Certificate, showing the serial number of the particular Pendant sent to you (the number recorded in the Society's Master Registry of Ownership and microfilm library), will be sent to you within thirty days after you have received delivery. This protects your investment against inferior imitations or counterfeits and also documents the value of your serially-numbered Pendant for insurance purposes.

The "GOLDEN MOMENT" Pendant is truly a captivating piece of Collector Jewelry and a gift which she is sure to treasure always — one which will assure many more golden moments each time she wears it.

We again stress the fact that only 1,500 are being publicly offered. So, to avoid possible disappointment or needless delay, we strongly suggest that you mail your completed order coupon just as quickly as possible before the small Limited Edition is completely sold. There is also another reason for acting promptly. Due to the volatility of the gold market, we cannot guarantee the prices published here for any longer than thirty days.

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☐ Payment in full enclosed $ _____

Charge to: ☐ American Express ☐ Master Charge ☐ BankAmericard/Visa ☐ Diners Club

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By Scott Eyman

Life of Americana's collectors-in-chief is a bowl of treasures

With books, columns, newsletters, TV shows, Ralph and Terry Kovel have long played a part in kindling a national passion for antiques

Triumphant smiles greet a rare pair of Renaissance Gothic Victorian pedestals for family guest room.

On summer weekends in southeastern Pennsylvania, the cars on their way to Renninger's gigantic indoor-outdoor flea markets gingerly pull around the Amish buggies trundling along the sides of the roads in the undulating hills of the Pennsylvania Dutch country. A droning single-engine airplane gallantly tows a succession of sailplanes aloft, only to have them spiral slowly back to Earth, hopelessly grounded by the airless, broiling day.

The people who have gathered to buy and sell at Renninger's markets at Adamstown and Kutztown are a motley assemblage resembling, in turn, Old Testament prophets, bike-gang rejects, aging hippies, disbarred diamond merchants, carny barkers, faded Roseland ballroom queens, farmers of all ages and just plain folks.

The wares range from the usual flea-market perennials of glassware, silver, furniture and all the random detritus of the past 200 years of domestic American life, to a lone iconoclastic stand that specializes in tombstones—nice new ones just waiting for that appropriate inscription and the right dates. An old woman across the aisle pauses in her methodical slicing and wrapping of cheese to cast a series of nervous glances at such an unpleasant reminder of mortality in the midst of a ritual of summertime affirmation; everybody else merely seems amused.

Like, for instance, the couple attired in casual clothing so razor-sharp that it might as well be formal: the man with a sad-eyed, just-folks face, the woman with an air of unassuming chic. They move quickly, expertly through the ranks of dealers, their practiced eyes and hands checking for a high caliber of materials and workmanship in items that, for the most part, seem to be lacking in both.

A large trophy cup, inscribed to the anonymous winner of the "Bang and Go Back Race," piques the man's interest. "What's the dealer price on this?" he asks, in his gravelly bark of a voice.

"Well, what's it marked?" asks the proprietor of the stand, lounging in the shade.

"Uh . . . $20. No, just kidding. You've got it marked at $55," the man answers.

"Oh well," comes the reply, "call it $25."

"I'll take it."

"Ralph, come look at this," calls his wife from across the aisle. A brief bout of dickering results in her purchase of a piece of pottery; her free cash used up, she writes out a check.

The woman tending the stand glances at the name on the check and blanches. "Oh no," she says, with a curdled moan that bespeaks somebody who has just been had and knows it. "Well, it's yours now; would you tell me how much that piece is really worth?"

"Well, honey, it's strictly for a present," says the

To celebrate their 30th wedding anniversary, Kovels (foreground) go prowling a Pennsylvania flea market.

Photographs by Robert E. Dorksen

In their guest room is a pair of hand-painted, joined cast-iron beds with a Victorian crazy quilt.

man, known to his wife as Ralph, to business acquaintances as Ralph Kovel, and to the world of antiques and collectibles as the Louis Rukeyser of all things old.

"My glass doesn't seem to be moving," the dealer continues, wanly, "and I don't understand why."

"You've got some excellent material here," says her customer, known to Ralph as Terry, to business acquaintances as Terry Kovel, and to the world of antiques and collectibles as the Sylvia Porter of all things old. "It's going to move, you just have to do some shows in Ohio. Glass is selling very well there."

The small clay vessel securely theirs, Ralph and Terry Kovel relish the moment when, like the Count of Monte Cristo, their identity is revealed to all, then continue the joyous jaunt through their favorite thing in the whole world: a flea market filled with acres of unexpected treasures.

As the afternoon wears on, as the thousands of people spread out over the field, the mood turns toward the strenuously festive, like a large family picnic that usually contains a fair amount of haggling.

The Kovels' haggling (of minimal duration, really, for they know what they want, what it's worth and what they will pay for it) nets them, next, a folding table dated 1886, with a fleur-de-lis pattern of holes drilled in it. The dealer thinks it's a traveling mortician's preparation table. (Terry later speculates that it was more likely used for medical examinations.)

"This," confides Ralph in a notably proud voice, "is our 30th wedding anniversary. Some of my friends take their wives to China for their anniversary, some to South America, but I take my wife to a flea market." Terry, moving past some nearby dealers' tables with alacrity and dégagé assurance, doesn't seem to mind.

"Now, that trophy cup I bought," continues Ralph, "is marked 'Heintz Art' and is very nice."

Is it worth $25?

"It is to me, and sooner or later it will be to everybody. It's getting tougher to find bargains because everybody's getting smarter."

"But," says Terry, finishing, as she often does, paragraph and thought, "they can't know everything."

Maybe not, but for the 27 years since the publication of their first book on antiques, *Dictionary of Marks—Pottery and Porcelain,* Ralph and Terry Kovel have certainly made a valiant effort to know everything related to the expanding, exploding world of antiques and collectibles. They have written 29 books and price guides, with more in the pipeline; they coauthor a weekly column syndicated in 200 newspapers and a regular column in *House Beautiful;* they publish a monthly newsletter; have won a local Emmy in their hometown, Cleveland, Ohio, as "best entertainment show" for the 26 episodes of their educational TV series *Know Your Antiques,* and have also raised two children. Separately, Ralph, a self-confessed workoholic, has found time to establish food brokerage and manufacturing companies.

From his base in East Cleveland, Scott Eyman writes for the Plain Dealer Magazine *and serves as a contributing editor of* Ohio Magazine.

A turn-of-the-century general store in their home basement is the collecting project the Kovels consider the "longest running and most fun" of all. Labels on these cans are rare because most were throwaways.

The Kovels' commercialization of their interest in antiques was more out of independence and pride than strict financial necessity. When Terry Horvitz, the daughter of a well-to-do northern Ohio family who had her degree from Wellesley, married Ralph Kovel, a hard-driving entrepreneur/salesman who had dropped out of Ohio State, it was not exactly cause for family rejoicing. "We met on a double blind date," she recalls. "I was the other guy's date. Three days later, I told my parents I'd met the man I wanted to marry." And in 1950, marry they did.

Because of his in-laws' normal skepticism, Ralph Kovel legitimized an infatuation with antiques begun shortly before he and Terry were married, when they were paying monthly installments on a $15 music box they had seen in a Boston antique shop. "I'd always been interested in pottery," recalls Ralph, "which generally has identifying marks on the bottom. If you don't know which mark means which factory, you can't really tell what's valuable and what's not, and the only book on the subject had the marks grouped by country of origin, which made looking for something a complete pain.

"Terry was in New York with her parents, so I decided to put all the A's and B's together in straight alphabetical order. When my wife and her father came home and I showed them my work, he looked at me in disbelief and asked, 'Is that the best way you can spend a weekend of your time?'

"Oh, that got me mad. So I took the idea to Crown Publishers. Nothing happened. I finally told them that if they weren't interested, there were several other publishers who were—a total lie. Anyway, back in the mail comes a check for $500 as an advance, with $500 more on acceptance of the manuscript. At the time, I was making $75 a week. I showed Terry the check. 'Who's going to help you?' she asked. 'Uh, well, my secretary and you,' I said. 'If my name isn't on it, I'm not helping,' she said. So her name went on it, but in second place." *Dictionary of Marks* is in its 30th printing and Crown, which has issued the Kovels' succeeding books as well, reports that, combined, they have sold more than a million copies.

The reasons for the Kovels' success? To some extent, their own hard work. Perhaps more important, a sense of timing that might be envied by Fred Astaire. The antiques explosion began around 1950 as mass-production technology began to impose a homogenizing blankness, sterility of design and lessening of quality on many consumer products. In addition, in-

stant mobility left a large gap in the nation's psyche; acquiring solid evidence of a cultural tradition—even if it wasn't *your* cultural tradition, even if you didn't *have* a cultural tradition—provided at least a small sense of foundation. The search for a secure past as ballast for an insecure future has now reached such proportions that, according to a 1977 survey taken by *Advertising Age,* one in five Americans collects something, with the Kovel's conservative estimate of a 1980 ratio rising to one in three.

"The guy we're writing for," says Ralph, "is the guy who has something his mother left him and would like to know more about it. To some extent, I'd say we were the right people in the right place at the right time." There is, of course, a symbiotic cause-and-effect relationship in all this; the more people know about remnants of cultures past, the more value they assign to those remnants. "Some dealers hate us," admits Terry, "but we are reporters and researchers; we never make value judgments. A lot of what we do is like biology, devising categories and subcategories for things that have never been categorized before. As far as prices go, we just tell people what's being asked and gotten; prices obviously out of line we don't use."

The scope of the Kovels' work necessitates a large staff and success has provided them with the means, if not the space, to indulge their own collecting instincts to the fullest. Their his-and-her offices (Terry's is at home, Ralph's is four miles away) together house a staff of 12—treated with a cozy, if demanding, paternalism—and a pair of keypunch machines for the entering of data and prices from the antiques field's specialized magazines, newspapers, catalogs (information is fed in five days a week, 16 hours a day). Part of the Kovels' eclectic private collection is in continuous transit between their house, various museums and their offices. They lent an 18-inch Haviland vase to the Smithsonian's 1876 Bicentennial Exhibition. Says Ralph: "Half the fun is sharing your collection with people who know enough to ask the right questions." In Ralph's office there are glassware, coral, stained-glass windows, paintings and a gong to strike in mock emergencies, all monitored by an inflatable Ralph who sits in the real Ralph's chair when he's away.

Their Shaker Heights home contains everything from Rosa Bonheur paintings to Egyptian Revival furniture of the 1880s, including a downstairs breakfast nook devoted to late 19th- and early 20th-century advertising art, and a combination office and 6,000-volume research library (p. 81) converted from the garage and made stylish by adding a beamed ceiling and stained-glass windows from a razed church.

Upstairs, the bedrooms feature a bed once owned by Western Reserve pioneer Jeptha Wade, as well as two joined iron beds (p. 76), possibly Mediterranean, with scenes from *Othello* painted on the footboards. The hallway boasts a photograph of Ralph's grandfather taken by no less than George Eastman.

The items are mixed so as to blend all periods and styles. The only attempt at a thematic approach is in the basement: a stunning re-creation of a turn-of-the-century country store (p. 77) complete with hand-cranked cash registers and shelves of canned goods with authentic labels.

Buy with savvy—and speed

"This house," says Ralph, "has largely been put together from house sales and flea markets. Of course, if it had been up to Terry, we'd still be sitting on camp chairs." A quick glance at his wife draws only a consider-the-source shrug. Failing to draw a parry or counterthrust, Ralph continues: "We'll cover maybe 20 or 30 flea markets a year, buying a few things and checking out prices."

"And we buy things that interest *us,*" adds Terry. "If we like it and the price is right, we buy it. That's one of the cardinal rules: buy only what you enjoy."

Other rules of collecting?

"Buy it when you see it," she continues. "Antiques won't wait for very long. If you don't know your dealer, be sure you know your antiques; fakes can be awfully convincing. Start small and learn the market."

"And don't forget to be practical," says Ralph. "Measure your space; don't bring a big desk home only to find out you can't get it in the door. Don't buy old painted furniture if you've got small children around, because of the possibility of lead poisoning. And—this is pretty important—don't refinish or restore any more than is necessary; repainting, stripping off an old finish, removing or adding trim destroys the value of a piece, it doesn't add to it."

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"The trick, in terms of investment," says Terry, "is to get on the wave before it breaks, to buy something before it becomes stylish and to be smarter than anybody else. To me, that's where the fun comes in."

And what is the most valuable item the Kovels have ever stumbled across in their forages? "Hmmmmmm." Ralph grows thoughtful. "Probably that silver sugar castor by Paul Revere. No, not the one on the horse—his father. We saw it at a house sale and knew it was 18th-century, but we didn't know it was a Revere until we took it home and cleaned it. We bought it for $12; it's worth, oh, maybe $10,000."

Although their house is furnished in a profusion of heavy styles that should, theoretically, clash, it is a perfect representation of their personalities. Its air of lived-in comfort is typical of the unpretentiousness familiar to anyone who has seen them on television, where Ralph snarls about Terry's "cheapness" and Terry responds by mentioning her husband's almost terminal "gracelessness." This is no carefully calculated public persona; it is, rather, their life, with the pretense of an adversary relationship providing them a way to retain the veiled thrill of courtship and to cut some of the sentimentality, if not sentiment, from 30 years of mutual devotion. Besides, Terry *does* appear to begrudge the spending of money, and television technicians around Cleveland still tell of the time Ralph shattered an antique cut-glass bowl during an on-air auction by tapping it with his pen to test for pitch and, when showing how to handle an old campaign torch, he almost set the studio on fire.

This spirit of relaxed improvisation and the informality of their writing have led to a few subtle snubs and squabbles over the years, a refusal by some members of the antiques establishment to take them seriously—but not by all. "I frankly don't know if our peers recognize us," says Terry. "Ralph, who are our peers?" His answer: "I don't know. The thing about antiques is that so much is subjective. For instance, what is 'Folk Art'? I'll tell you: a barber pole called Folk Art can sell for $275; an ordinary barber pole for $75. The only difference is the fancy name."

Surprisingly, the Kovels have a listed phone number and share as much of their information as possible. When the kitchens of Biltmore House, the mansion completed for George Vanderbilt in 1895 and made a museum in 1930, were recently restored, the curator had a problem: while the appliances and other paraphernalia reflected the turn-of-the-century period, nobody knew what to put on the shelves to give a lived-in look. A phone call followed by a quick curatorial visit to the Kovels' label collection and trademark file, a little work on a color copying machine and—voilà!—shelves of cans that *looked* authentic.

"We never thought of doing what we're doing as a business," says Ralph in a reflective moment. "We wrote a book, then we wrote another one a few years later. It was a hobby and it made some money." Terry snorts: "But not all that much. We were such naive authors that Ralph once moved his office without notifying Crown and we didn't get a royalty check for three years. We just assumed nobody was buying any books." And Ralph adds: "Those were funny, hustling days. Once, when our son Lee and daughter Kim were very small, we were all at an antique show and had just left when he pulled a little blue bottle out of his pocket and she produced a metal dog. They announced that they'd just stolen them. I was furious. I couldn't believe it. 'What do you mean by doing that?' I demanded. 'Who taught you to behave like that?' 'You and Mommy did,' Lee said. 'Whenever you and Mommy leave a store you always say "Boy, did we steal that!" Well, if you can, why can't we?'"

Then the philosophical Ralph takes over: "If you're destined to own an antique, it will wait for you. It's really almost mystical, the sense of union you experience when you first see the antique you've been looking and waiting for. That satisfaction is very, very special. It's what makes all the hard work—the tramping through the woods and dirty shops—more than worthwhile. It's all part of the search for something forgotten and wonderful."

After close examination, Kovels decided not to buy this "advertising chair"; it looked "suspicious."

A research library in converted garage doubles as Terry's office; here, she and Ralph review mail.

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By Wanda Corn

The painting that became a symbol of a nation's spirit

Grant Wood's masterpiece, American Gothic, *was first exhibited just half a century ago; now it is a mirror in which we see ourselves*

A famous painting celebrates an important birthday this year. Exactly 50 years ago, in November 1930, *American Gothic* was exhibited for the first time at an annual exhibition of contemporary American painting and sculpture at the Art Institute of Chicago. The two-and-a-half-foot-high painting, neither pretty nor especially modern in style, bluntly portrayed a pair of country folk. It was barely accepted by the selection jury. But the story goes that one juror, an amateur painter and a trustee of the museum, liked the stern couple with the pitchfork and insisted the painting not only be exhibited but also be awarded the $300 Norman Wait Harris Bronze Medal. He had his way. The painting was an immediate hit, commented upon in national newspapers from Boston to Chicago. It catapulted its artist, Grant Wood, into national fame.

Today *American Gothic* pervades our popular culture. Caricatures of the plain and nameless couple wish us well on anniversary cards or sell us cereal and cars on television. On dental hygiene posters the man holds a toothbrush instead of his pitchfork, urging us to brush our teeth; when the woman holds the pitchfork, she speaks for women's liberation. In political cartoons the rural couple becomes the nation's first family, posed in front of the White House rather than a tiny farmhouse. On homemade cards, husbands with wives, boyfriends with girl friends, fathers with daughters, stand holding pitchforks, babies or drinks, against bungalows, ranch houses or churches. In short, *American Gothic* has become an infinitely variable mirror in which Americans can see themselves. It has become a kind of collective self-portrait, one which haunts and entertains us.

Davenport Art Gallery

As precise an observer of himself as of all else, Wood did this interlocutory *Self-Portrait,* 1932-41.

The instant fame of the picture, however, caught Wood by surprise. Thirty-nine years old at the time, he had been painting pictures for almost 20 years. But his reputation had always been local. In Cedar Rapids, where he lived, he had long been well known and supported by the townspeople. In high school, they remembered, he had illustrated the yearbook. Then he had gone off for two successive summers to study at a design school in Minneapolis and worked another couple of years in Chicago, attending night classes at the Art Institute. After a brief World War I stint designing camouflage for the Army, he had returned from Washington, D.C., hoping to earn a living from his artistic talents. He taught art in the

Born of a way of life, *American Gothic,* 1930, soon became a kind of popular image of native personality.

The Art Institute of Chicago

House in Eldon, Iowa, fascinated Wood for its native personality and idea of Middle Western civilization.

Nan Wood Graham today; she posed for the painting when Wood assured her "no one will recognize you."

Cedar Rapids school system, painted murals for businessmen and civic groups, and offered his services as an interior decorator.

Like so many Americans in the pre-Depression decade, Wood thought the United States—and especially the Midwest—had little to offer the creative artist. The center of artistic gravity was in Paris, not in America. Accordingly, Wood made three trips to Europe between 1920 and 1926. He attended a few art classes, visited museums and painted street scenes and landscapes, mostly in Paris. He lived there on the Left Bank, wore a beret and loose-fitting peasant shirt, and even grew a beard and moustache. On his 1926 trip, this Bohemianized Midwesterner arranged an exhibition in a Parisian gallery, his first one-man show.

Back in Cedar Rapids, Wood put aside his French attire and became a local advocate for the arts. Though he was shy and soft-spoken, and had no head for organizational or financial matters, he effectively generated enthusiasm for art in Iowa. With his boyish face, twinkling eyes, and captivating sense of humor, he attracted a large circle of devoted friends. A number of them—artists, businessmen and journalists—gathered over lunch for meetings of the Garlic Club, which Wood organized for fun and good talk. The club was named for Wood's habit of rubbing the salad bowl with garlic, a practice he had picked up abroad.

As Wood's community involvement increased, so did his appreciation for Midwestern culture. He began to realize that, like so many others, he had been seeking culture abroad without ever looking at what lay about him. He came to admire Sinclair Lewis and

Nebraska State Historical Society

Late 19th-century photographs like this provided pictorial convention Wood used in *American Gothic.* It is the John Curry sod house near old West Union, Nebraska, photographed by S. D. Butcher in 1880s.

Ruth Suckow, Midwesterners whose books, built around provincial types of people, communities and events, were attracting national attention. And he became close friends with Jay Sigmund, a Cedar Rapids insurance man who wrote prose and poetry about Iowa rural types such as those Wood painted later in *American Gothic.* Sigmund's affection for the Iowa farmer and villager and his appreciation of Iowa's vernacular architecture rubbed off on Wood.

Such new interests began to affect Wood's painting and eventually expressed themselves in *American Gothic.* In 1927, when asked to paint murals for the Hotel Chieftain in Council Bluffs, Wood chose to paint scenes about Iowa's past and present. He decorated the conference room with a panoramic view of the 1849 settlement in Council Bluffs, painted in an intentionally primitive style based on an actual mid-19th-century bird's-eye-view of the town. It was called "The Pioneer Room." In the dining room, Wood created a lush and contemporary farm scene, attaching a real wood-rail fence over the mural to heighten the illusion. This room became "The Corn Room."

The following year, the artist tried to create a portrait conveying pioneer hardiness and courage. When asked to paint the 84-year-old father of David Turner, a Cedar Rapids funeral director who was his friend and patron, Wood posed his model against an 1869 map of Linn County, Iowa, where the elder Turner had settled in the 1870s and developed his career.

Wood called the painting *Portrait of John B. Turner, Pioneer,* a title that promised more than the work delivered. The figure was an individualized portrait, not a frontier archetype. The next portrait he tried, however, a companion piece to the Turner work, was more successful in presenting an iconic pioneer type. The model this time was Wood's 71-year-old mother, who lived with the artist in Cedar Rapids. Hattie Weaver Wood, born in Iowa, had taught school on the prairie and farmed with her husband until his early death in 1901.

Called *Woman with Plants* (p. 94), this portrait reflects some important new ideas that Wood brought home from Germany in 1928. He had gone to Munich for a few months to supervise production of his stained-glass window for the Cedar Rapids Veterans Memorial Building. While there he visited local museums, particularly the Alte Pinakothek, and studied the early Flemish masters who he felt succeeded in doing what he now wanted to do: to take local faces and landscapes and give them universality. So he composed *Woman with Plants* as though it were a Flemish portrait—a close-up, half-figural composition, the body filling the lower frame and the sitter's hand pushed close to the picture plane. And he painted the figure with a new kind of clear and sharply focused realism, simplifying and blocking out each area of her costume and simulating the qualities of Renaissance glazes.

His innovations went beyond style. To make his mother look legendary rather than contemporary, he portrayed her in an old-fashioned apron and pre-

Wanda Corn, recently a Fellow at the Woodrow Wilson International Center for Scholars, is writing a book on early 20th-century American art.

sented her in a stiff pose, gazing out of the picture with a faraway look. Behind her he placed an emblematic background symbolizing the Midwest—farmland, barn and windmill—and in her hand a pioneer woman's attribute, the hardy sansevieria plant popular on the frontier. In her portrait, Mrs. Wood had become a secular saint of the plains.

It was this kind of formula that he tried again in *American Gothic,* this time with an even drier brush, surer drawing, and greater success. The inspiration for the painting was a little Gothic Revival farmhouse that Wood stumbled upon in the tiny southern Iowa town of Eldon where he was visiting friends (p. 86). Modest in size, this house resembled hundreds of cottage Gothic homes and farmhouses built throughout the state in the latter half of the 19th century when Iowa was being settled. What caught the artist's eye about this particular structure were its prominent and oversized neo-Gothic window and its vertical board-and-batten siding. The simply and emphatically designed house immediately suggested to Wood a long-faced and lean country couple—"American Gothic people to stand in front of a house of this type," as he put it. He rapidly sketched his idea on the back of an envelope, made an oil study of the house, had a friend photograph it, and went back to Cedar Rapids where he persuaded his sister, Nan (p. 86), and his dentist, Dr. McKeeby, to become his models.

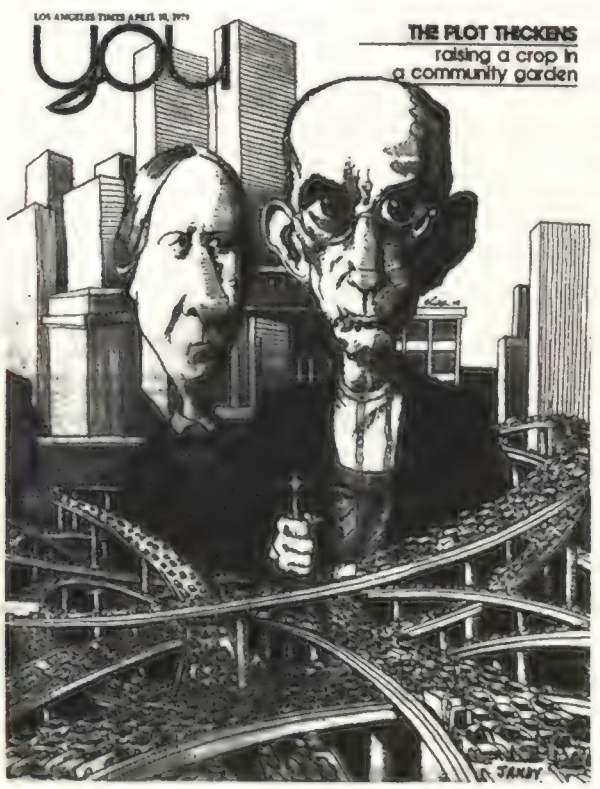
He dressed his two models as if they were "tintypes from my old family album." He instructed his sister to make an apron trimmed with rickrack taken from an old dress, to wear a dark dress and brooch as her mother had in *Woman with Plants,* and to pull her fashionable marcelled hair back tightly from her face. For Dr. McKeeby, Wood found an old-fashioned collarless shirt among his painting rags, to be worn with bibbed overalls and a dark jacket.

Wood also borrowed the poses and demeanor of his models from old photographs: the still, upright torsos, the unblinking eyes, and the mute, stony faces are all reminiscent of early studio portraits. In placing the couple squarely in front of the house, he borrowed another popular late-19th-century convention, one drawn from the itinerant photographers who frequently posed couples and families in front of their homes. To each figure he gave an appropriate attribute: the man a symbol of maleness and work—a three-tined pitchfork; and the woman, an emblem of femininity and domesticity—the potted plants just over her right shoulder on the porch of the farmhouse.

Ultimately, the painting's success lies not only in its evocation of America's rural past but also in its pictorial structure. The endlessly repeating verticals and sharp angles, for instance, speak of the couple's set and determined ways, while the static composition and clean forms express rigid routines and tightly structured lives. Even the somber palette of whites and blacks, browns and greens, conveys simplicity and lack of sophistication.

But, most important, Wood gave his couple a rural character through his gentle and good-natured humor. Prior to *American Gothic,* Wood's wit had usually surfaced only in conversation, at parties, or in the humorous pieces he made for friends and himself. His art had generally been serious and reserved. But with *American Gothic* humor became a part of his mature

Parodies crossed the land; here, the Los Angeles Farmer's Market.



Gas crunch version substitutes nozzle for familiar pitchfork.

Caught in trap of freeway life, a farm couple is without hope.

style, beginning in this case with his unlikely choice of models, his 30-year-old sister and 62-year-old dentist. Though it may come as a surprise, Wood intended his couple to be father and spinster daughter, *not* man and wife. His original idea, Wood's sister tells us, had been to ask a neighborhood "old maid" to pose for the woman, but he was too embarrassed to ask her. Nan Wood Graham, then married, took on the role.

Spinsters were stock characters in Midwestern literature at the time, so the idea of a stern, repressed, unmarried daughter was not a particularly new one. But it helps explain some of the painting's humorous details. The cold, steely tines of the pitchfork, for instance, were meant as a persuasive country weapon standing firmly between the spinster daughter and all intruders. Wood then playfully mimicked this show of force by setting it against the limp seams of the man's overalls and the delicate tracery of the Gothic window.

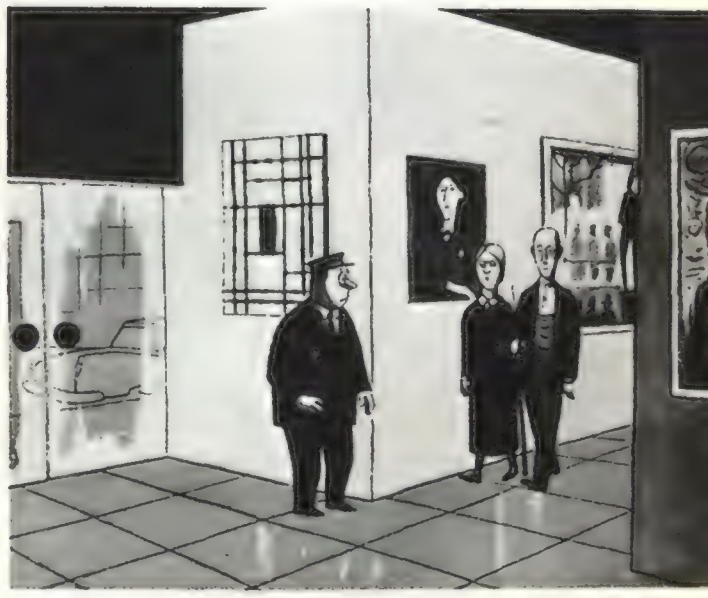
To suggest the spinster's unfulfilled womanhood, Wood flattened her chest and then teasingly decorated her apron with a suggestive motif, a circle-and-dot pattern. To underline her prudery, he allowed a single strand of wayward hair to escape from her bun and snake mischievously down her neck. It is the only unruly element in an otherwise immaculate conception.

With *American Gothic,* Grant Wood struck his full stride and accepted his newly found calling as a painter of the Midwest. He now regretted the time he had wasted in Europe hunting down subjects "when there was such a wealth of beauty at hand." In *Return from Bohemia,* a pastel, he flaunted his new identity, showing himself not in a studio, but seated at an easel in front of a barn, surrounded by his public—loyal farmers and villagers. In the studio he now wore the garb of the local "peasantry": a farmer's overalls.

Following *American Gothic* he painted a series of pictures about rural American life, most of them recalling people and events from his childhood, rather than those from the modern Iowa of his adulthood. For the first ten years of his life Wood had lived on a farm, and it was this life that he now recalled, not so much as a nostalgic sentimentalist but as a kind of folklorist. He wanted to capture the uniqueness of his past and to memorialize his heritage, particularly the history of the common farmer whose culture formed the bedrock of Midwestern life. In *American Gothic* he had given legendary stature to those anonymous Midwestern men and women who tamed the prairie, built the towns and created America's "fertile crescent"—and who, in the process, became insular, set in their ways, and fiercely devoted to home and land. Now, in *Fall Plowing* (p. 91), created in 1931, Wood paid homage to the walking plow with steel share, the kind developed by John Deere and used by Midwestern pioneers to turn the rough and sticky prairie sod into farmland. With Deere's self-scouring plow farmers no longer had to stop every few yards and clean the caked, moist soil from the blades they had brought with them from the East. In the painting Wood celebrates the plow's influence on Iowa's history. He placed it alone, midway through a turn of the soil, as if it were a sacred relic, the source of the lush farmlands and bountiful harvested fields that stretch out behind it.

The walking plow appears often in Wood's paint-

This hard-sell poster drills the message of dental hygiene.



Charles Addams created this surprising cartoon for *The New Yorker.*

Life on the farm, air pollution version, complete with masks.

Abbott Laboratories

An awkward naked rooster is flanked by pair of formidable hens: *Adolescence,* 1933-40.

ings but nowhere more evocatively than in *Spring Turning* (pp. 95-97). Seen from a bird's-eye view—a perspective Wood favored—farmers plow the swelling fields into a velvety quilt of green and brown squares. The scene is one of majestic beauty, the painting another Grant Wood homage to the verdant land and the farmer's labors on it.

In *Dinner for Threshers* (pp. 92-94), Wood recounted the most exciting yearly event of his childhood, namely the day when the big threshing rig and crew arrived to help his father thresh the ripened grain of the family farm. Choosing a narrow panel almost seven feet in length, Wood painted the scene in the form of a religious triptych. In the center of a cutaway farmhouse, he placed the main event, the farmers' meal; to the right, the womenfolk preparing the meal; and to the left, men washing up before eating. On the hayloft door of the barn, Wood inscribed 1892, to represent the year of his birth. (Later it was established that he was born in 1891.)

Chickens as pets and subjects

There are four chickens in the lower left of *Dinner for Threshers,* reminiscent of Wood's youth. Chickens had been Wood's favorite animals on the farm and he had raised them as pets, often using them as subjects for drawings. No surprise, then, that Wood would return to chickens in his mature paintings, and in one instance, create a major painting using three fowl as his models. In *Adolescence* (left), Wood used chickens to create a humorous parable about the shyness and awkwardness of growing up. The adolescent—a young, gangly rooster—is in the center, trying to shield his pubescent body from our gaze. Shy and unsure, and without feathers to cover him, he is completely at the mercy of the two hens who nearly crush him with their matronly plumpness. In contrast to his reticence, they swell with self-satisfaction and authority!

With his irrepressible sense of humor, his love of patterns and simple geometries, Wood transformed the annual rituals of rural Midwestern life into lighthearted legends. On two occasions he did the same with national folktales. *The Midnight Ride of Paul Revere* offers a bird's-eye view of a storybook panorama of Revere's famous nocturnal gallop. In *Parson Weems' Fable,* the parson pulls back a cherry-fringed curtain to show us a young George Washington, hatchet in hand, admitting to having cut down the cherry tree. This story, of course, was apocryphal, a tale Parson Weems made up in the early 19th century to sanctify the father of our country. To point up Weems' exaggeration, Wood portrayed the young Washington with an adult head, the likeness coming from Gilbert Stuart's famous painting.

Deere & Company

Fall Plowing. Wood: "All the really good ideas
I'd ever had came to me while I was milking a cow."

Wood's *Daughters of Revolution,* 1932, predictably was controversial; some hated it, some applauded.

Cincinnati Art Museum; The Edwin and Virginia Irwin Memorial

American Gothic, *part of the nation's life*

Parson Weems' Fable was the second time that Wood had painted George Washington into one of his pictures. In *Daughters of Revolution* (p. 91), he had placed three women in front of a reproduction of Emanuel Leutze's *Washington Crossing the Delaware*. The three oval-faced ladies, whose slit eyes, long necks, and bony fingers resemble the features of barnyard animals, were composites of portrait photographs that the artist had studied in the yearbooks of the Daughters of the American Revolution. Painted in 1932, the year the nation lavishly celebrated Washington's 200th birthday, one of the ladies raises her teacup in a kind of "dry" toast to the hero. (Colonial teas were an annual ritual of the DAR on Washington's birthday.) While Wood was clearly poking gentle fun at what he felt was excessive reverence and patriotism, he was also debunking the public's adoration of the image hanging on the wall behind the women—General Washington's brave crossing of the icy Delaware River on Christmas night to take the enemy by surprise. It was one of the country's most loved, though inflated, depictions of the first President.

Some DAR members objected to the humor in Wood's

In this grand celebration of American farm life, *Dinner for Threshers,* 1934, Grant Wood used form of Renaissance triptych to portray the beloved annual event of his childhood.

painting, just as a few farmers' wives had been insulted by the dour woman in *American Gothic* (her face could "sour milk," one of them said). But objections generally gave way to praise as the artist became one of the country's best known artists in the 1930s. With fame came a more complicated life and less time for painting. The artist was engaged for lecture tours and exhibitions. He began to make lithographs, partly to satisfy the demands of his large audience, and agreed to illustrate a special edition of Sinclair Lewis' *Main Street*. In 1934 he became director of the Public Works of Art Project in the state of Iowa. In the same year he was invited to become a professor of art at the University of Iowa in nearby Iowa City. Though it meant a move from Cedar Rapids, the artist accepted the offer and moved to Iowa City. He bought a neglected, large, mid-19th-century brick house which he meticulously restored and furnished.

Wood loved to teach and dreamed of inspiring a new generation of Midwestern regional artists. In the early 1930s he had cofounded a summer art colony and school in Stone City, an abandoned quarry town close to Anamosa, where the artist had been born. For two summers, in 1932 and 1933, the art colony gave hope to everyone who worked there that a Midwestern school of artists might develop. But owing to the general hard times, and with financial affairs not being one of Wood's talents, the school ran up increasing debts and closed.

At the university, Wood tried again to rally support for a figurative school of art based on local subject matter. To this end he helped modernize the university's old-fashioned and very academic art curriculum, and gave a great deal of time to budding artists. But by the time of his early death in 1942, some artists and critics had begun to feel that Wood's work was too old-fashioned, too literal and conservative.

Of all the major regionalists, however, Wood's star dipped but never fully set. Today his reputation is clearly on the rise again. Scholars are beginning to reassess his work and museums clamor for his paintings. Earlier this year, when two gold medallions authorized by Congress and struck by the U.S. Mint went on sale, one was dedicated to Grant Wood, the other to the singer Marian

Fold out and turn over ⟶

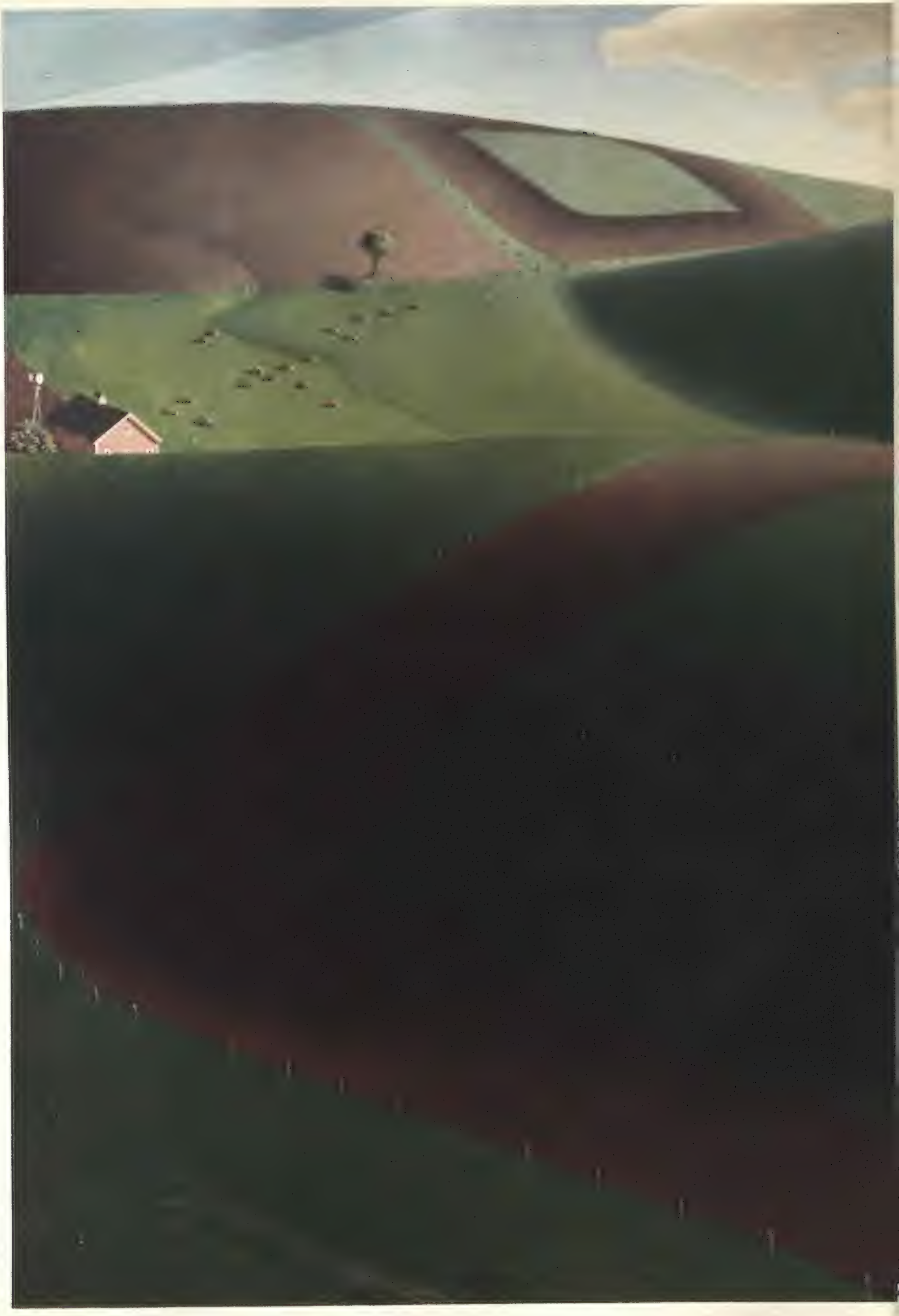
Anderson. On one side of the one-ounce gold coin there is a portrait bust of the artist; on the other, a tiny version of *American Gothic*.

More important, Wood's paintings have never stopped charming and entertaining large audiences. In Iowa, as might be expected, for very good reasons of place and personality, he is the state's premier artist. His paintings and memorabilia can be found throughout the state's public and private collections, notably in the Cedar Rapids and Davenport museums. Many of his important paintings, however, hang elsewhere in major museums: *The Midnight Ride of Paul Revere* at the Metropolitan Museum in New York, the *Daughters of Revolution* at the Cincinnati Art Museum, *Parson Weems' Fable* at the Amon Carter Museum in Fort Worth, and *Dinner for Threshers* at the Fine Arts Museums of San Francisco. *American Gothic* appropriately remains near the Corn Belt which it mirrors so engagingly. At the Art Institute of Chicago, *American Gothic* is the painting most sought after by the public. As the Aesop of the Midwest, Grant Wood endures as one of America's favorite artists.

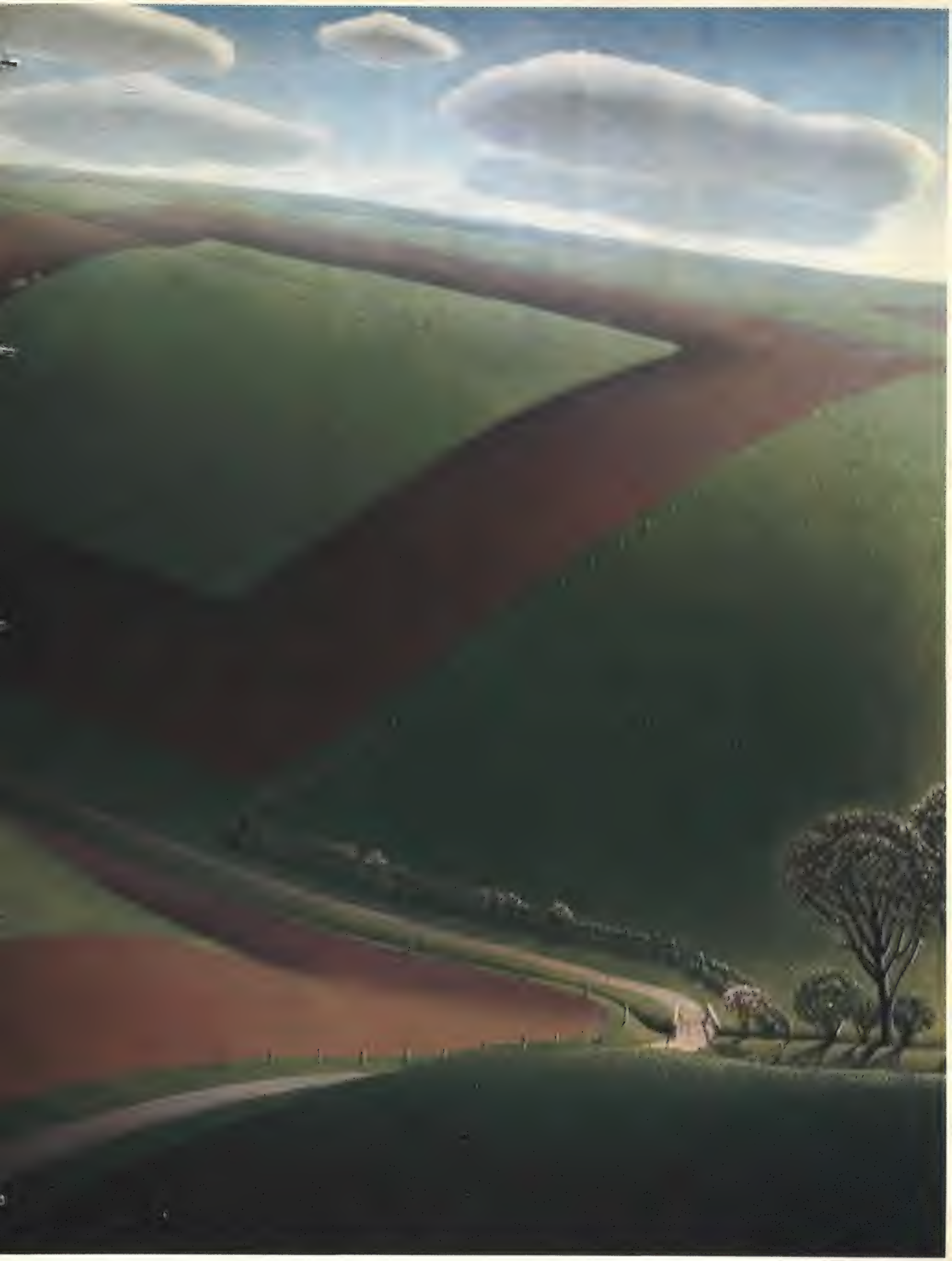
Courtesy of The Cedar Rapids Art Center, Purchase Club of 40

Woman with Plants, 1929. Portrait of Wood's mother, Hattie Weaver Wood, is pure as any Flemish master.

The Fine Arts Museums of San Francisco; Gift of Mr. and Mrs. John D. Rockefeller 3rd



No landscape in all of art history has better conveyed simple love of the land: *Spring Turning*, 1936.



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Fill in your Beethoven

Romantics

236653. Berlioz: Symphonie Fantastique—Bernstein, New York Phil. (Columbia)†

283846. Bizet: Symphony in C; Mendelssohn: Symphony No. 4 (Italian)—Stokowski, National Sym Orchestra (Columbia)✻

296806. Bruch: Violin Concerto No. 1: Lalo: Symphonie Espagnole—Pinchas Zukerman; Mehta, Los Angeles Phil. (Columbia)†

301887-391888. Bruckner: Symphony No. 5. "Ultra-spacious!" *Stereo Review.* Kurt Masur conducts the Leipzig Gewandhaus Orch. (Counts as 2—Vanguard)✻

230433. Dvorak: Symphony No. 9 (New World)—Bernstein conducts New York Phil. (Columbia)

262337. Elgar: Symphony No. 2—Solti and the London Philharmonic (London)✻

228684. Grieg: Peer Gynt Suites 1 and 2; Bizet: Carmen Suites—Bernstein, N.Y. Phil. (Columbia)†

287854. Liszt: Les Preludes; Prometheus; Festklange—Solti and the London Phil. give dazzling performances of these three colorful symphonic poems (London)

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By S. Frederick Starr

Recording echoes from the years when jazz was born

Scholars at Tulane University are building a meticulous, authentic, lively archive of how and by whom the art was created

An exponent of the old sound, "Jim Crow" Robinson, played at San Jacinto Hall recording session in 1964.

Jazz, as everyone knows, was born in New Orleans and went "up the river to Chicago" after the U.S. Armed Forces badgered the city into closing Storyville, the city's notorious red-light district, in 1917. Or so the legend runs.

But is all of it true? Sitting in his office at Tulane University's William Ransom Hogan Jazz Archive, Richard B. Allen denies most of it. First, he reminds us, the Mississippi doesn't go to Chicago. Second, there were almost as many "sporting houses" in New Orleans after 1917 as before, and therefore no fewer job opportunities for piano players (the bands, which played in honky-tonks, cafés and dance halls, were not affected, either). And, finally, even those jazzmen who did leave the Crescent City maintained close ties with the birthplace of jazz, visiting there frequently, often dropping in for years at a time.

Allen, who has been described as a combination of Southern gentleman and W. C. Fields, delivers these judgments with an air of finality—and with good reason. In the course of 22 years, first as associate director, then as director and now as curator of the Archive, he has taped or supervised the taping of interviews with more than 600 persons from the world of jazz—including practically every living New Orleans pioneer of the art. The typed summaries of the interviews alone add up to more than 10,000 pages. Thanks to this colossal effort, the Archive in New Orleans, the city where it all happened, has become the chief memory bank for the early history of America's richest native art form—and also a valuable national resource.

Visitors to the Archive are in for a surprise. After mounting to the fourth floor of the Howard-Tilton Memorial Library, one passes through glass doors to the elegant and subdued world of the Manuscript Division. Passing by the mahogany paneled "Treasure Room" on your right, you reach more glass doors, labeled simply William Ransom Hogan Jazz Archive. Beyond lies a very different world. The rocking beat of the New Orleans Rhythm Kings or of Sam Morgan's Jazz Band blares out over the Archive's tape system. Researchers tap their feet and smile contentedly as they take notes on the history of jazz at Altmeyer's Saloon. And a heated argument is taking place over the actual sound of John Robichaux's 1893 orchestra.

At the heart of the Archive are the taped interviews. Take the session with Jim (Jim Crow) Robinson (above), one of the last of the surviving early New Orleans trombonists at the time of the taping in 1958. Robinson hailed from Deer Range, Louisiana, downriver from New Orleans.

"What is Deer Range today?" Robinson was asked.

"It's nothing but water."

"Nothing there now?"

"They had a crevasse there. Ship run through the

Archive memorabilia include sheet music, cylinder and disc record players, Albert clarinet.

Color photographs by Enrico Ferorelli

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Rare photograph of the legendary Buddy Bolden and his band. Bolden is standing, second from right.

The Original Dixieland Jazz Band, elegantly attired, played in London soon after World War I, in 1919.

The great Jelly Roll Morton, seated, lays down some words of wisdom to his Red Hot Peppers in 1926.

levee in high water and just ruined the whole parish down there. Nothing there now but water, nothing but a duck pond now." Yet it was this lost crossroads which, if we are to believe Jim Crow, boasted "one of the best bands in the world—I mean the country."

Robinson went on to explain his initiation into the mysteries of the trombone. It was 1917, and Robinson was on an army work crew in France. One day the unit's bandsman came to the 26-year-old and proposed that Jim take up the horn:

"Man, listen, you see they done took the rifles from us [musicians]? Now listen, you got a shovel and you got a pick. You got to handle both them things. You got to shovel all that dirt out of there."

Robinson thought it over. "So I looks every day—and we had them big heavy shoes on and they had give the fellows what was in the band nice army shoes, you know, the light ones, shiny and with nice leggings." Beginning with this very practical line of reasoning, an artist emerged whose recordings over half a century are still being reissued and enjoyed.

Rare recordings and union archives

The Tulane Archive includes far more than the typed copies of such interviews. Tens of thousands of rare recordings line its shelves, as well as an unparalleled collection of long-forgotten sheet music from the turn of the century and before, and literally thousands of handbills and photographs pertaining to the early days of jazz. A priceless recent addition is the archives of The New Orleans Musicians Union. Most of the early jazzmen were literate, but judging by the scarcity of written records, not many were in the habit of expressing themselves on paper. And those who did so tended to write with great self-consciousness, often for the purpose of codifying the legends that had grown up around them or to settle old scores with rivals. The hallowed jazz tradition of "cutting"—a kind of musical duel—lives on in the reminiscences.

Bunk Johnson, for example, one of the pioneering trumpet players who lived long enough to make a triumphant comeback after years on the loading docks in New Iberia, Louisiana, penned the following gem of modesty regarding his own place in jazz history: "So to outdo a man like me, you must know how to read and write music and know it darn good because I'm born first and have more sense than the average musician of today. Now I'm here to be tested by any man that says he knows more about music than Bunk Johnson. Please put him on me. . . ."

But why should an encounter with a tape recorder produce more objective or accurate information than the written source? It needn't, of course. Nick La Rocca, cornetist and leader of the Original Dixieland

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Jazz Band that made the first jazz recording in 1917, devoted whole hours of his interview to proving that he personally invented jazz. Other supposed "inventors" of jazz left their claims in the Archive as well, proving that memory is faulty and egos are big. But, as Curtis Jerde, the newly appointed director of the Archive, points out, "If you've really gotten to know someone prior to the interview, he's less likely to try to hoodwink you than if he were writing for an anonymous audience or speaking to an unknown reporter." And the process of talking itself revives sleeping memories.

Allen and his collaborator from the earliest days of the Archive, the 75-year-old patriarch of jazz studies, William Russell, have devoted themselves to getting to know the New Orleans musicians whose world they have recorded for posterity. They have visited the sick, given blood and found jobs for musicians who spent their daily working lives as barbers, janitors or yardsmen. Now retired and suffering from asthma, Russell (p. 109) still spends almost every evening at Preservation Hall in the French Quarter. There, hunched on a stool by the door, this grandfatherly expert chats with and receives the homage of musicians from all over town—and the world.

Allen's style is different. Unlike violinist Russell, Allen is not himself a musician, but the extent of his knowledge more than offsets his lack of musical training. He points out, for example, that *Tiger Rag* began life as a New Orleans quadrille. And he has interviewed oldsters who actually danced it as a quadrille. By no means all of his contacts are old-timers, though. In fact, everyone in New Orleans seems to know Allen, which makes barhopping with him a very slow process indeed, and an eventful one.

Unraveling the myths of jazz

Allen, Russell, Jerde and the 80 people who at one time or another have worked with them have proceeded with caution. They know that myths can be perpetuated unwittingly as much by the questions they ask as by the responses they receive. Here again, the musicians' own help has been invaluable. For instance, more than one history of early jazz claims that the saxophone did not find its way into New Orleans groups until the mid-1920s. But when the interviewers put this question to the musicians themselves, they were told of saxophones in jazz ensembles beginning at least as early as 1915.

An interview with Mrs. Alice Zeno (p. 106), the 94-year-old mother of the veteran clarinetist, George Lewis, revives a distant musical past. Longevity was chronic in the Zeno family and Mrs. Zeno's reminiscences turned also to *her* grandmother, who had died

The Louisiana Repertory Jazz Ensemble rehearses at New Orleans' Maple Leaf Bar on Oak Street.

in 1910 at the age of 101. When she reported several words in "Senegalese" that the grandmother had passed on to her, it was clear that Alice Zeno's memory was not playing tricks on her. Linguists were called upon and recognized them as Wolof. Through tiny, bright-eyed Alice Zeno, the thread of living musical memory was extended back virtually to Louisiana's first days under American rule.

The value of such living witnesses to America's cultural heritage was first recognized by the Library of Congress folklorist, Alan Lomax, in the late 1930s. It was Lomax who found the New Orleans jazz master Jelly Roll Morton managing a bar in Washington's U Street and sat him down at the Library with an acetate disc recorder and a piano. Allen and Russell resolved to do the same, taking as their targets every jazz musician in the Crescent City. They were fortunate that the chairman of Tulane's History Department, William Ransom Hogan, shared their passion. By 1958 the Archive was open. At Hogan's death in 1971, the Olympia Brass Band played at his funeral.

It must be admitted that Tulane's massive archival effort has not brought to light any early stars of the first magnitude who were previously unknown. Joe (King) Oliver, the New Orleans Rhythm Kings, Jelly Roll Morton, Louis Armstrong and Zutty Singleton retain their status as *Jazz Masters of New Orleans,* to quote the title of a 1967 book by the Smithsonian's

S. Frederick Starr is a professional jazz musician, an authority on Soviet affairs, and the vice president for Academic Affairs at Tulane University.

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Alice Zeno, 94, mother of clarinetist George Lewis, remembered jazz lore going back to the 19th century.

Drummer Harold Peterson sr. and wife, Erma. "They wanted me to play, not to percuss," he recalls.

Frank Lastie, drummer in waifs' home band with Louis Armstrong, became deacon and gospel musician.

director of jazz programs, Martin Williams. But if the archivists have discovered no unheralded geniuses, they have succeeded in turning up masses of new information on some of the best-known jazzmen. And other musicians, who heretofore existed only as staring faces in faded photographs, begin to emerge from the shadows.

The legendary Buddy Bolden (p. 102), for example, whom Williams calls "Buddy the King" and whose mighty cornet blasts were audible, it was said, all the way across the Mississippi before he succumbed to alcohol and insanity in 1907, begins to emerge as a real person for the first time. His biographers would still like to know more about the man who set the pace for such later horn players as King Oliver and Louis Armstrong. But the vivid reminiscences of such people as Bolden's friend, the barber Louis Jones (described by his wife as "an oldtime Hot Pappa"), do much to fill in the blank spots of his troubled life. Bolden's playing is still legendary. His biography is not.

The interviews reach beyond Bolden to his teacher, Manuel Hall, who, according to Jones, "used to keep company with Buddy's mother. Manuel broke him in." Jones' reminiscences ranged back even to Hall's predecessor, Buddy Peyton. Well before the turn of the century, Peyton's "string band," featuring Peyton on the accordion, was playing the music that would eventually be spiced up to become New Orleans jazz.

A contemporary of Bolden's, George Vitelle (Papa Jack) Laine, was among the first white jazzmen and one of the few of his generation of either race to live

Enola Barnes, 85, recalls musician husband, Emile, for Archives' former director, Richard Allen.

Alcide "Slow Drag" Pavageau, on December 10, 1958, reported on the early days of jazz in New Orleans.

long enough to talk into Bill Russell's microphone. From Laine's gruff voice—interrupted frequently by wry cracks from his wife—we learn of the repertories of the bands that stood on the threshold of ragtime and jazz. And there are some surprises. Nowadays purists talk about jazz "classics," but when jazz was in the cradle, the pioneers appropriated themes from virtually any source. As Laine tells it, they would play whatever song, ballad or operatic aria was popular with the public. They would transform it, of course, with their syncopated rhythms, their bent and shaded tones and their collective improvisation.

How did the first jazzmen play? A curtain of silence separates us from the era before 1917, the year in which The Original Dixieland Jazz Band's version of the new music was first recorded. True, Bill Russell and others rediscovered a significant few from the pre-1917 era, gave them new sets of teeth and had them play before modern recording equipment. But such living links are rare.

Hence the Tulane Archive provides us with the most tantalizing clues, sometimes in the form of examples sung in quavering old voices or beaten out with fingers on a kitchen table. We learn, for example, that the aggressive style of drumming that Gene Krupa later brought to a peak was quite foreign to early jazz. As drummer Harold Peterson (opposite) put it, "They wanted me to play, not to percuss." In the same vein, pioneer Baby Dodds told a Chicago interviewer that "the drums should be felt, not heard"—advice he himself did not always follow.

If the interviews lead to any one conclusion about the style of the first jazz, it is that there was no single way of playing it. Just as the early New Orleans jazzmen would play any tune, they would use any combination of instruments, including violin, valve trombone, mandolin and even mellophone. And they played hard. Jim Robinson told the story of how, in the years 1900-1920, the same band would show up at a march, then at a dance, and then in church the next day. "Them fellows used to play all that stuff, you know; take 12 of them out and play just as much as a big symphony orchestra."

At a time when the National Endowment for the Arts and private foundations are subsidizing jazz festivals and concerts, it is of more than passing interest to know who went to hear the founders of the art. The answer, according to Archival documentation, is that just about every class of New Orleans society had had some exposure to jazz by the outbreak of World War I. Dr. Edmond Souchon, a prominent New Orleans obstetrician and dedicated guitarist down to his death in 1968, recalled audiences as diverse as the stevedores who haunted the sleazy bars of the Irish Channel district to the debutantes who shocked their parents by dancing the cakewalk and foxtrot to the music of King Oliver's band. Such insights render the Archive of rare importance to the chroniclers of American music and culture.

A leader among the latest crop of scholars is Curtis Jerde, the Archive's new director. For a book he is writing on the prehistory of jazz, Jerde is digging in the Archive for material dating back to the mid-19th century. More than anyone else before him, Jerde is

uncovering forgotten links between early jazz and the rich traditions of classical and religious music in New Orleans, as well as its neighborhood folk music. In the process, he is expanding the Archive's reach still further. Nearly every day there are other researchers there from centers for jazz studies at Rutgers University, Southern Illinois University and the Louisiana State Museum.

Jerde not only writes up his research but applies it directly in a new repertory jazz band being formed by several Tulane faculty members, along with other New Orleans musicians. The Louisiana Repertory Jazz Ensemble, as the group is called, focuses on the Teens and Twenties, when King Oliver, Jelly Roll Morton and the New Orleans Rhythm Kings held sway. The New Orleans Ragtime Orchestra, by contrast, in which Bill Russell plays violin, concentrates on such forgotten turn-of-the-century gems from the Archive as *Reindeer Rag, Trombonium* and *African Pas.* This group, incidentally, includes two Europeans and is led by Swedish pianist Lars Inar Edegran, a former staffer at the Archive. In Turin, Italy, Gigi Cavicchioli's enormously successful *Ragtime Ensemble di Turino* has drawn its repertory largely from the Archive, to the delight of audiences as far afield as Volgograd (formerly Stalingrad). Meanwhile, Yoshio (Kid Claiborne) Toyama's Jazz Band brings to Tokyo audiences the knowledge that he picked up during a period as a photographic consultant to the Archive.

In our country the number of professional New Orleans-style jazz groups has yet to reach old levels, and there are fewer places for them to play. But there are at least some jazz bands to be heard in practically every city, and, equally important, the art has become truly global in scope.

While strolling along Foucher Street last month, Dick Allen ran into his old friend John L. Jones, a cousin of the Richard M. Jones whose Jazz Wizards was one of the earliest bands formed solely for recording, along with Louis Armstrong's epoch-making Hot Five. Leaning on his cane, the 69-year-old Jones dredged up some fresh reminiscences that had somehow escaped Allen during 22 years of research. Following the conversation, Allen quickly added the information to the Archive, along with the source and date. An hour later, he was discussing the popularity of New Orleans jazz in Japan. Allen suddenly paused and mused, "What would Richard M. Jones have thought about all this?" One wonders. The answer is lost in pre-Archival history.

Guitarist John L. Jones stops by the house on First Street that once belonged to the great Buddy Bolden.

Bill Russell, 75, jazz studies patriarch, works in an office cluttered with jazz documentation.

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[1] Another popular technique is the "paper" car—a phantom automobile registered and insured solely to be reported stolen, then collected on. Thanks to such methods, auto theft *in general* is accelerating at over 10% a year, and cost Americans $2 billion plus in 1979.

[2] Ætna participated in the 1978 National Workshop on Auto-Theft Prevention and was a primary sponsor of last year's Connecticut Auto-Theft Reduction Seminar.

[3] A "fraud profile" asks such questions as: Was the theft reported within 60 days of the insurance policy's effective date? Or was it *not* reported to the police—a basic policy violation? Was the car recovered burned, and hence of no value except to support a claim? Can the claimant produce no ownership title at all? The more suspicious answers, the higher the red flag gets hoisted.

[4] Ætna supports standardizing title procedures and effective disposition of vehicle identification numbers at the wrecking yard. This would put the brakes on "paper" car theft by giving every legitimate vehicle its own "birth" and "death" certificates.

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By Jan W. Steenblik

In reinventing the small airplane, less can be more

Pilots of these homebuilt minimal aircraft must fly by the seats of their pants and, at times, by the soles of their shoes

Foot-launchable ultralight aircraft like this Pterodactyl Fledgling offer unlicensed, sensual flight.

The grass is twilight-gilded and rippled by his prop wash as John Moody lifts 104 pounds of Easy Riser hang glider onto the small of his back. *Wheee* whines the 11-horsepower West Bend go-kart engine bolted to the rear of the tailless biplane. Moody jogs, then runs headlong down the runway. At a full run, heart and feet pounding, he eases the Riser's nose up. The wings tug upward on his harness and, with a last skipping step over the grass, John Moody is flying.

Shifting his weight back slightly, Moody coaxes his wings into a slow, 28-mph climb. Banking over a storybook barn and silo, he joins a dozen similarly improbable flying machines in stately procession around an oval fly-by pattern.

These minimal aircraft, generically dubbed *ultralights,* are flying at the Experimental Aircraft Association's 1980 fly-in and convention at Oshkosh, Wisconsin. From a distance, the ultralights look and sound like swarming mosquitos. The most jaded observers are provoked to laughter by these caricatures of airplanes. But the swarm grows.

It was here at Oshkosh, in 1976, that John Moody made the most public—though not the first—flights of a powered hang glider, thrilling scores of thousands of rapt spectators.

The Federal Aviation Administration at first required Moody to license his craft as an experimental (*i.e.*, homebuilt) airplane, and himself as a student pilot. Later, however, the FAA declared that foot-launchable aircraft are hang gliders, albeit powered, thus freeing pilot and aircraft from all but air traffic regulations.

Living far from good hang gliding hills, Moody originally sought a simple, inexpensive way to get his Easy Riser aloft and, engine off, to circle up in thermals (large, invisible "bubbles" of warm air) rising from the Wisconsin dairyland. He thought he was inventing a cheap motor glider; however hang gliding purists grumbled that Moody had simply reinvented the airplane.

But the airplane was never quite like this. These nimble, fluttery craft are a curious mix of something old, something new, much that is borrowed, and something blue—or red, or yellow, or a combination of bright peacock colors. They meld such diverse components as stainless steel aircraft cable, Dacron sailcloth, plastic hang glider fittings, pop rivets, bicycle wheels and lawn mower throttles. Most are powered by engines adapted from chain saws, go-karts or snowmobiles. The ultralights typically cost $3,000-$4,000, take 20-500 hours to build from a kit with hand tools, and fold up to fit on a small trailer or in a cartop box. Sipping little more than a gallon of gas or alcohol per hour, they take off and land at 15-25 mph and cruise at 30-45 mph.

In four years of swift evolution that beg comparison with the early years of the airplane, the rapidly proliferating ultralights have followed a marked trend toward bigger engines, more weight, higher speeds, greater complexity and—worst of all—higher prices. Tailless models have sprouted tails; pilots, who once steered by shifting their weight, now are opting for full aerodynamic controls.

Jan W. Steenblik, a licensed private pilot and ultralight builder, is editor of Air & Space *magazine.*

Photographs by Joseph J. Lucas jr.

In 1979, five ultralights barnstormed from California to Kitty Hawk, North Carolina; two overflew Wyoming's 13,766-foot Grand Teton en route. This year, Californian Eagle Sarmont wants to island-hop a modified Pterodactyl Fledgling across the North Atlantic to Europe.

A few pilots are pushing their luck with illicit aerobatics and passenger rides. And now some manufacturers are designing so-called ultralights to loop and spin and carry two.

Today, it seems, the ultralight designers *are* reinventing the airplane. But aeronautics poses more intriguing problems than simply how to fly faster, farther, higher or carry more load.

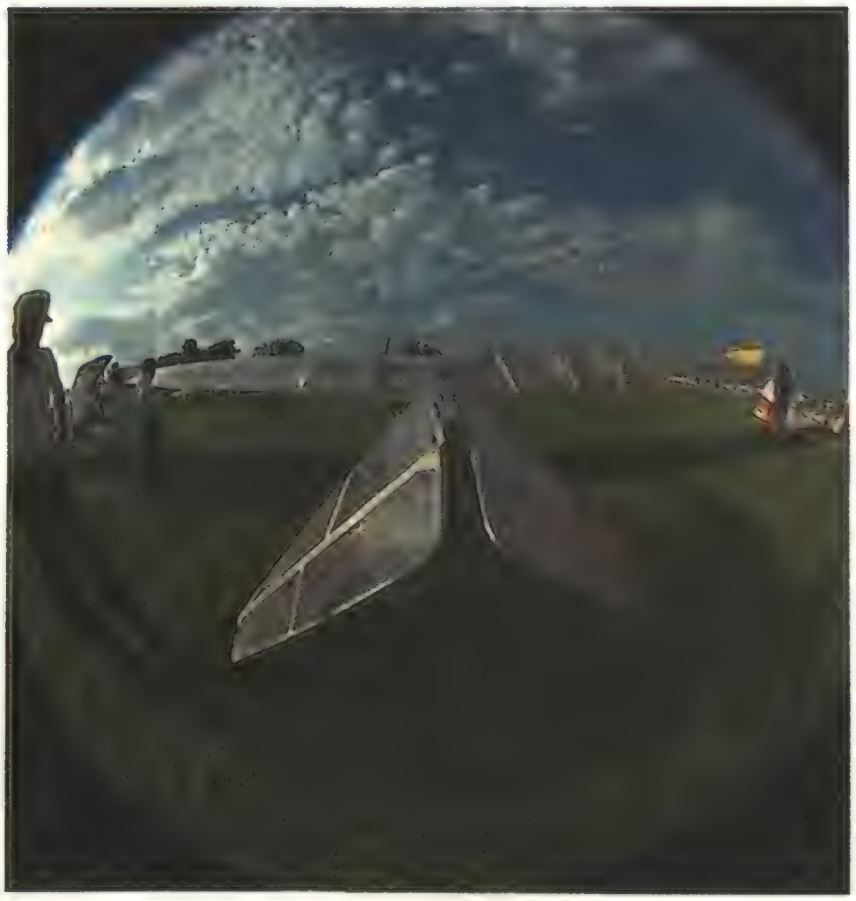
Steve Grossruck of Issaquah, Washington, has been working on one of those other problems. On an evening late in the week, he struts the stuff that helped win his Kasperwing tailless monoplane the Outstanding New Design award in the ultralight category at Oshkosh '80.

Five hundred feet above the grass, Grossruck slows the Kasperwing, engine stopped, to a standstill. Wing-

Aerodynamically sophisticated, the Kasperwing can parachute vertically.

Foot-launching his Easy Riser, pioneer John Moody runs hard to take off.

Owner tinkers with his two-cycle go-kart engine, popular on smaller ultralights.



The transparent skin of the mosquitolike Lazair reveals an aluminum skeleton.

tip rudders popping in and out like pinball flippers, the craft sinks straight down. At 40 feet, Grossruck drops the Kasperwing into a short, steep glide to a feather-soft touchdown. Delight mixed with relief ignites the crowd's applause, and angry officials ground Grossruck for reckless flying.

Grossruck shrugs off the grounding as official ignorance. "In any other airplane," he says, "that maneuver *would* be dangerous, if not impossible. But not with this wing. They just don't understand the technology. This is going to revolutionize the aviation industry."

Perhaps, but not likely. Nor is it likely that there will ever be an ultralight in every garage. Ultralights are not the long-awaited airplanes for Everyman, the answer to the earthbound commuter's frustrations, at least not in a direct sense. To look for uses of these basic aircraft beyond their original function is to diminish their essential charm.

John Moody likes to cruise low over the lush marshes near his home in Kansasville, Wisconsin. Occasionally he flushes ducks and herons. The birds outrun him easily. Sometimes a man profits much by losing.

Gliding silently, a Quicksilver pilot yanks the pull-cord to restart his engine.

Ultralights swarm in at Oshkosh fly-in as spectators crowd the flight line.

Lakes and rivers can become runways for an aircraft with Styrofoam floats.

"THE MOST SIGNIFICANT CAR OF THE LAST QUARTER-CENTURY."

Don Sherman: Car and Driver, July 1980

"I hereby nominate the Volkswagen Rabbit as the most significant car of the last quarter-century. It's the only automobile in the world that actually anticipated the energy cataclysm we've suffered through for the last six and a half years and conducted its affairs accordingly.

"The Beetle put millions of people on wheels, but it was the Rabbit that introduced them to efficiency. By efficiency, I mean the most people-miles per gallon, an index the Rabbit established roughly six years ago. The pretenders to this throne are ten deep at last count, and still more are waiting in the wings.

"We all love this car as family sedan, as

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diesel car, as sports coupe (Scirocco), and also as convertible while our own Yankee ingenuity has spawned the VW Pickup Truck. As if this weren't enough, Volkswagen engineers have testified that a Rabbit capable of 80 mpg is well within the realm of possibility. You'd be foolish to doubt their word.

How do you improve the most significant car of the last quarter-century? Significantly. But not recklessly. Or mindlessly. The magic change for 1981 is improved passing power and improved economy at the same time. EPA estimated 28 mpg, 42 mpg highway estimate. (Use "estimated mpg" for comparison. Mpg varies with speed, trip length, weather. Actual highway mpg will probably be less.) The 1981 interiors are lavish. (If you woke up in a Rabbit, you'd never guess it was a Rabbit.) The headlights, taillights and grille are sleeker and even more functional.

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The thing to remember is that the improvements started with the Rabbit itself. We are proud and pleased to have been honored by Car and Driver, but not totally surprised. An awful lot of work went into it.

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In the National Elk Refuge near Jackson, Wyoming, Hope Ryden looks over the country for coyotes.

By Patricia Curtis

Wide, wild world of Hope Ryden, bedroll naturalist

A fierce sense of outrage over the treatment of wildlife turned a documentary film maker into prizewinning conservationist author

The Wyoming rancher sits at the wheel of his parked, beat-up, four-wheel-drive truck on the windswept ridge and watches the slim, blonde woman slowly approaching a black mustang. She is speaking to him softly, singsong. The wild horse eyes her cautiously, retreats slightly, but does not run.

"Do I think she has some miraculous way with animals? I don't know," muses the rancher, Lloyd Tillett. "But I know that if she had three weeks here, she'd get within ten feet of that wild horse."

Hope Ryden, naturalist, author, photographer, film maker and wildlife defender, has come to the Pryor Mountain Wild Horse Range, as she does every spring, to check on this horse and his mares and foals, as well as the other horses in this particular herd.

To go afield with Hope Ryden is to see determination incarnate. She scales the ridges to scan the horizon or, undeterred by rocks and brambles, searches out a stream bed to look for tracks. She reads the earth

Afield with Hope Ryden, naturalist

In one of the naturalist's photographs a doe defends her fawn's range from a buck in the Florida Keys.

A friend and defender of the much-maligned and persecuted American coyote, Hope Ryden was able

and it tells her what animals and how many went here, and when.

Ryden intends to count every wild horse on the Pryor Range and won't go home until she has. She feels it is important to know precisely how many there are—which ones died over the winter, how many mares have living foals. That way exact figures can be presented if the herd is assumed to be approaching overpopulation. Ryden is an indefatigable activist on behalf of these dwindling symbols of the Old West.

"Sergeant Pryor has a new mare," she comments as she climbs back into the cab of the truck. "That young sorrel with the white blaze wasn't in his harem last year. She must be that filly from the bay's harem—she was two years old last year, remember? Sergeant Pryor must have lured her away."

Tillett, a Bunyanesque mountain of a man, longtime friend of both Hope Ryden and the Pryor Mountain mustangs, swings the truck into grumbling motion. It bounces slowly along the rutted, rocky, ungraded path that serves as a road in this wilderness, which 12 years ago was set aside as a refuge for one of the last herds of America's wild horses.

"Horses!" she cries, bringing her binoculars to her eyes. Tillett brakes and looks in the direction she indicates. This experienced outdoorsman can see nearly

to come amazingly close to the shy creatures during a two-year study in Yellowstone National Park.

The pecking order can get rough among mustangs. Here, stallions fight in Wyoming mountains.

as well with his unaided eyes as the rest of us can with binoculars. He and Hope Ryden joke about a government official who once referred to "ocular reconnaissance"—"He meant he went out and eyeballed the situation," guffaws Tillett.

What strikes a novice upon first attempting horse counting in the Pryors is how difficult it is to spot the animals. Miss Ryden and Tillett can gaze at a hillside two miles away and discuss the colors of the six or eight horses there, plus all their foals ("There's another one, a black one, lying in the grass," Miss Ryden will exclaim).

The first mustangs were feral animals, once domestic and descended from the noble mounts of the conquistadors. They still exhibit qualities of that bloodline—smallish, compact, often with one less lumbar vertebra, like Arabians. It looks as though the breed tries to make up for that missing vertebra by growing a longer tail, for the tail of the Pryor Mountain mustang is no brushy little appendage but a glorious fall of hair that may skim the ground at its heels. They move so surefootedly and lightly they seem to float.

The mustangs were traded or stolen from their original Spanish owners by Indians in the 16th and 17th centuries. During many years of Indian warfare and migrations, some two million horses escaped and went wild. The early explorers in the 1800s encountered herds of them sweeping across the land. Settlers helped themselves to these horses whenever they could catch and tame them. The modern cow pony owes much to its mustang antecedents. As the West became settled, the dwindling herds were heavily depleted by the practice of mustanging—running down the animals, capturing them, and sometimes brutalizing them into submission or death.

"Today mustangs are threatened by loss of habitat. They are resented by many cattle growers in places where the horses share the public land with livestock," points out Hope Ryden. "And the hunting establishment would also like the mustangs off the public land because they believe the horses compete for food with game animals.

"It was the mustang that made me become a bedroll naturalist. I had been a documentary film maker, came out here with a crew in 1968 to make a film about mustangs for ABC television news. I learned that these horses had absolutely no protection from abuse or exploitation. There they were on public lands, harming

A journalist and naturalist, Patricia Curtis specializes in stories about animals. Her books are Animal Rights *and* Animal Doctors.

In the Florida Everglades, more suited to alligators, Hope Ryden and cameraman film a documentary.

no one, at the mercy of anybody who came along. Because they were feral, they did not enjoy the legal status of a wild animal and consequently the protection of legislation. I realized that if I was going to help them effectively, I'd have to learn about them firsthand. So I spent three years studying them, living for months at a time in many of the places they existed. I had never been happier. I wrote three books about them, and never went back to film making full-time."

The mustang is not without friends. The American Horse Protection Association, a vigilant, politically savvy group, has fought in the courts for seven years on their behalf.

Miss Ryden is an adviser to the AHPA and an active board member of Defenders of Wildlife. Her testimony before Congress helped pass the "wild free-roaming horses and burros" Act in 1971, and when the Act was challenged she presented an amicus curiae brief before the Supreme Court. The Act's constitutionality was upheld and the horses' right to exist was guaranteed, at least legally.

Face-to-face encounter with a wolf

Hope Ryden was born in St. Paul, grew up in Illinois, but every summer her family retreated to a cabin in the woods of northern Wisconsin. There were few other children for miles around the Rydens' cabin, so she became accustomed to spending hours in the forest alone, watching animals. She recalls a time when she was about nine years old, meeting one of the last wolves in that part of the country: "I was walking in the woods when all of a sudden, there it was. We looked at each other for a long moment. That wild animal struck a deep note in me."

She earned her bachelor's degree at the University of Iowa, did graduate work at Columbia, and began a career in film making. She wrote, produced and directed some 40 films that took her all over the world, and was one of the group funded by Time Inc. that transformed documentaries from staged movies to the authentic *cinéma vérité* they are today.

Hope Ryden regards her coyote studies as her most significant work. This greatly misunderstood and much-maligned animal shares with the wolf a mythical and grandiose reputation for evil. It is regarded as a marauder capable not only of decimating whole flocks of sheep but of bringing down deer, cattle, even elk on the hoof. "In truth, its main diet is carrion and small rodents," Miss Ryden explains. "In areas where hunting has limited the amount of carrion and poisoning programs have eliminated rodents, some coyotes have acquired the habit of feeding on sheep."

Coyotes are the most persecuted animals in the United States, she says. They have been exterminated,

With friend, a Pryor Mountain mustang named Cookie, she joins forces in a range cattle drive.

hundreds of thousands of them each year, by sheep ranchers and by federal agents.

"I first became interested in these animals in the late Sixties while I was doing my wild horse studies," she recalls. "But though there's plenty of lore about them, I found very little information except about their migrations and efficient methods of killing them. The late, great biologist Adolph Murie had made a peerless study documenting the animal's crucial role as a scavenger in the food chain of an ecosystem. But there were no reliable behavior observations. *Canis latrans* has been hunted so relentlessly, the survivors have become extremely clever and elusive."

Miss Ryden began her field studies of coyotes in Wyoming, including two winters in Yellowstone, tramping alone on snowshoes or cross-country skis every day into the closed park to observe the coyotes search for food in the snow-shrouded wilderness. The first spring, in the National Elk Refuge, she discovered a den of pups. Sitting day after day in an irrigation ditch or in a hay shed where she could keep the animals in view through her 20-power spotting scope, she realized she was seeing the social behavior of a coyote extended family—which had always been presumed not to exist. She was the first to publish observations of "baby-sitting"—tending and feeding the young—by an "aunt" or "uncle" coyote.

National Geographic magazine became interested in what Hope Ryden was reporting and offered to fund another season. So the following spring she got permission to go off-road in a van in the Elk Refuge and searched until she found the same coyotes she had studied the previous year, at a new den.

"I knew you could never fool a coyote," she says. "And I knew they would never tolerate a person on foot coming close. But I thought they might put up with me in the van so long as they couldn't see me. So I determined never to show my face."

Coming close to "God's dog"

For seven weeks, she rose with the dawn and aimed her binoculars or her camera through the curtained door of the van, making notes, taking photographs.

Her unique study of these canines contributed much valuable insight about them and disproved some of the myths. She borrowed the Navajos' name for the coyote for the title of her book: *God's Dog*.

Some time ago, as now seems natural, Ryden gave up eating meat because, with her feeling for animals, it didn't go down that well and also because she feels the scent of a meat-eater casts a predatory aura, enough to repel the animals she wants to get very close to. She has a way, this elegant, attractive woman, sitting at the table with you in a fancy restaurant, of looking a long way out into the distance. No one, you feel, could be more tolerant of a poisonous spider, or a rattlesnake she unwittingly stepped on (which she has).

To help subsidize her extensive fieldwork, she sometimes returns to film making. She spent the better part of a year in Florida making a film on the coastal wetlands for the Public Broadcasting System, and it was during her work there that she caught sight from time to time of a species of small, delicate, very beautiful native deer. "Nobody could tell me much about them except that they had been hunted to the edge of extinction and were now protected," she says.

Her interest led to another year of fieldwork. "I began tramping through the mangrove thickets. The mosquitos were awful! Compared to them, the snakes and alligators there were nothing. I wore netting over my face and washed my clothes every night in mosquito repellent."

Another problem she encountered was that in the spring, when she wanted to photograph fawns, she couldn't find where the does had hidden them. Infant deer are well camouflaged, and their inborn ability to remain immobile is extraordinary. They spend the first four weeks of their lives virtually alone, hidden

and motionless in the grass, visited by their cautious mothers for perhaps only 30 minutes a day for nursing.

Some local people who became friends of Miss Ryden allowed her to observe three semitame deer that came into their yard to be fed. One day she happened to meet one of those does in the woods. The animal didn't run away, and she talked to it for a while. When the deer began to move on, she didn't seem to mind being followed. The doe led her through the mangroves to a higher ring of vegetation where buttonwood trees grew. The doe stepped into a clearing, and there was her fawn.

"I had been hunting in the wrong place. The doe had shown me where to find fawns—in the buttonwoods and not in the mangroves," Ryden recalls. "Later on, in the fall, I concentrated on photographing bucks." Her observations and photographs of these deer (p.120) resulted in *The Little Deer of the Florida Keys*. It won four awards.

"I once read a magazine article entitled 'You'll Never See a Bobcat,' " says Miss Ryden. "But I, with all the arrogance in the world—that's the animal I took on next. I would never have attempted it if I had realized what I now know about how furtive and reclusive bobcats are."

She began studying bobcats in her usual fashion. "I go looking for tracks and signs, and when I discover some, I just stay where they are. I quietly blend into the landscape and wait, maybe for days and weeks. The animals study me long before I ever see them.

"Do I carry a gun for protection? No—never. I believe animals know when you're armed—they pick it up from subtle changes in your body language, and they make sure you never see them. And I always have to be alone when I'm doing a field study. If you're with someone, you talk; also, there's twice the human smell for the animals to pick up.

"I am perfectly happy to live anywhere under any conditions when I'm working. My work is an endless learning process. In the field, I just watch the animals, take photographs and make notes. Then I go home to New York and plug into the great energy battery the city provides and do my writing." (An article on bobcats by Hope Ryden, illustrated with her photographs, will appear in a future issue of SMITHSONIAN.)

One secret Hope Ryden guards is her age. Another mystery is why she has never married. "She came close once, but she wouldn't tell him her age, so the whole deal fell through," Lloyd Tillett cracks.

Her own comment is: "I might find myself with someone who expected me to make and freeze a thousand casseroles before I went off on a field trip."

In Pryor Mountain Range territory in 1972, Miss Ryden, looking for bones of wild horses, turned up this buffalo skull. She investigates the skeletons of wild horses to note the number of lumbar vertebrae.

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By Israel Shenker

Treasures of the age of Alexander and Philip of Macedon go on U.S. tour

The exhibit called 'The Search for Alexander' fails to take the measure of the conqueror, but displays the many splendors of Greek art

Archaeological Museum, Pella

Hellenistic marble head of Alexander found in Pella, capital of the ancient kingdom of Macedonia.

Arrogant and vindictive, he devoted his life to conquest and his energies to pillage, destruction, torture and massacre, enslaving whole populations and exacting tribute from those he ruled. Generous and visionary, he devoted his life to the demands of honor and his energies to the brotherhood of man, unifying varied populations and earning the tribute of those he liberated.

Which Alexander the Great shall it be? Shall it be the libertine who married three women and slept with at least four mistresses, a man, a eunuch and even—or was this merely legend—an Amazon? Or shall it be the ascetic who sought virtue in toil, reproaching his companions for acquiring habits of luxury and vulgarity? Shall it be the Alexander who founded great cities—or the Alexander who named one city for his horse, another for his dog? Shall it be the Alexander who, in a drunken quarrel, killed the man who had saved his life—or the Alexander, student of Aristotle, who consorted with philosophers and poets and who patronized the arts?

The answer is also elusive in "The Search for Alexander," an exhibition which has been greatly altered since its opening at the Archaeological Museum of Thessaloniki in Greece. It will be on view at the National Gallery of Art in Washington from November 16 to April 5, 1981, before moving on to other American museums. Sponsored by Time Inc. and the National Bank of Greece, the show is rich in art and artifacts, gold, silver, marble, iron, bronze and clay, from the fourth century B.C., when Alexander ruled Macedonia and made himself master of Greece, lord of Egypt, sovereign of the great Persian empire, and began the conquest of India.

Gold larnax, or funerary casket, held the gold wreath (above) and perhaps the bones of Philip II.

Archaeological Museum, Thessaloniki

Photographs by Dmitri Kessel

Archaeological Museum, Thessaloniki

Dating from second half of fourth century B.C., this notable bronze sprinkler was cast in one piece.

Archaeological Museum, Thessaloniki

Looking like the latest in teapot design, silver *askos* has strainer spout. Fourth century B.C.

After the Washington showing the exhibition goes to the Art Institute of Chicago (May 16 to September 7, 1981), the Museum of Fine Arts in Boston (October 23, 1981-January 10, 1982) and the M. H. de Young Museum in San Francisco (from February 19 to May 16, 1982).

There are also archaeological treasures from the centuries following, as well as art of much more recent times inspired by his legend—drawings, paintings, engravings. In all this heralded profusion of wondrous and often sybaritic relics, there is precious little to turn the search into a discovery of Alexander. The show presents not the thoughts, ambitions, superstitions, strategies, victories and decrees of Alexander, but—and it is hardly negligible—the objects that ancient Greeks used to grace their homes, fortify their faith and enhance their revels, to lend beauty in life and comfort in the afterlife. Here is not Alexander, general, statesman, hero and tyrant, but the products of those he patronized, not the glory that was Greece but the grandeur that was home.

"We can't know from the archaeological objects the thought of the man, but we can know the level of artistic creation," said Manolis Andronikos, professor of archaeology at the University of Thessaloniki. "The idea of this exhibition is to give the civilization and culture of Macedonia before and during and after the time of Alexander."

Even before Alexander, gold and silver mines in Macedonia provided ore for minting coins. Under Alexander's father, Philip II, Macedonia acquired extensive new sources of mineral wealth which were used to secure the services of followers in support of new conquests.

Philip, who died a somewhat typical death for rulers of the time, which is to say he was assassinated in 336 B.C., had become ruler of Macedonia, one of ancient Greece's northern kingdoms, in 359 B.C. Also in the fashion of the time, he fought a number of wars, consolidating his kingdom and power and proceeding to extend his control over most of Greece. As commander-in-chief of the combined Hellenic forces, Philip began a campaign against Persia, Greece's ancient enemy, but was killed before he could take the field. As a statesman and military man he was overshadowed in history only by his son, Alexander.

Artisans adept at working with metal went to Macedonia from Ionia and the south of Greece. From new workshops came objects intended for utility, adornment and worship, as these craftsmen gilded the surface of prosperity with the gloss of art.

Journalist and author Israel Shenker lives and writes in Scotland, last wrote about the Morgan Library in September 1979 issue.

Temples were no longer of wood but of stone and even of marble, and a secular architecture that had languished—a splendor in public buildings, a squalor in private dwellings—came alive. What the gods enjoyed, men coveted, and amid the rough stone or mud-brick dwellings of the fourth century B.C. rose handsome, spacious villas with columns, courtyards, mosaics and reception halls.

The materials of the day helped dictate the products. Vase painting earlier had demonstrated the skills of the artist, but in Alexander's time vase painting declined and was replaced by relief ware and metal, recalcitrant to paint but hospitable to gilding, to embossing and to incising. Katerina Rhomiopoulou, director of the Thessaloniki museum, suggested that the craftsmen of Alexander's day pioneered three-dimensionality in jewelry. They used colored stones or glass paste, or combined two valuable metals of different colors.

Artisans produced cups with metal portraits embossed inside, and handles that sprouted ornate metal finials. On metal vessels and mirrors and jewelry, workmen lavished a masterly confusion of earthly botany and divine conceits—stems of ivy and Aphrodite, acanthus leaves and Heracles. Sculptors had mastered the harmony and unity of the body, had learned the skills of composition and had emancipated themselves from bondage to static conventions; statues became less heroic and more human, consecrated less to perfection than to realism.

Archaeological Museum, Thessaloniki

Silver vessels, fourth century B.C., are decorated with mythological heads: Heracles, left; silenus, right.

Beauty for now and after

Sculptors and artisans showed a flair for the monumental and a feeling for the miniature—massive bowls and delicate filigree, great storage jars and minuscule buds of gold. Workmen and their clients heeded not only the utility of the vessel but also its nobility, and so the exhibition includes pieces that were not only useful but full of delight, elegant, even exquisite, and the clash of styles underscores the tensions between the purity of the simple and the bravura of the "rococo." These were objects to use—or enshrine—at home and in tombs, perhaps to ensure an appropriate afterlife in another world where the dead would know divine comforts, wear crowns of precious metal and share in godly banquets at which they would drink heavenly vintages.

With possessions valuable in life and invaluable in death, the Greeks could please both god and Man, for the cup tossed off to quench the burning thirst of summer could, as libation, allay the anger of the gods and also, perhaps, provide a worthy receptacle for posthumous carousing. The exhibition concentrates on sculpture and metalwork like the vessels

Archaeological Museum, Thessaloniki

Flowingly graceful silver cup, or cantharus, dates from the second half of the fourth century B.C.

Philip II's (light pink) and Alexander's (dark pink) empires shown on modern map. Macedonia is shaded.

intended for home and temple and tomb, vases and jugs and pitchers and jars and urns and cups and bowls, vessels thick and thin, tall and squat. Most of the pieces were recovered from graves in Macedonia, Thessaly and Thrace.

Among the finds in the exhibition is an elegant silver oenochoe, or wine jug, with a relief head of a silenus or senior satyr (p. 129). A silenus is often portrayed with equine ears and legs, sitting drunkenly astride a cask or donkey. Miss Rhomiopoulou, a forthright, strong-willed executive, hailed this silenus as "so fine—with the features of a portrait," that, she declared, these were like Socrates' features. On a silver alabastrum, or perfume jar, are heads of Heracles (p. 129), who represented strength and courage to the Greeks. The portrait is perhaps as masterful as the silenus.

Miss Rhomiopoulou looked elsewhere for what she commemorated, acknowledging the awkwardness of her encomium, as the show's "biggest masterpiece." This is the almost 90-pound, yard-high bronze Derveni krater, a wide-necked, wide-bodied vase, from the fourth century B.C., which was used for the mixing of wine and water (p. 132). A relief on the vase depicts the wedding of Dionysus to Ariadne, with Dionysus already taking a husband's liberties, while nearby orgiastic festivities sustain the tone. Twelve animals in relief are fastened onto the neck of the krater, above a length of silver ivy.

Professor Andronikos waved his hands in arabesques of wonder as he sought to convey the many splendors of Alexander's era. Andronikos himself is in danger of becoming known as Manolis the Great, thanks to his discovery in 1977 of a great tomb, rich in fourth century B.C. relics, at the Macedonian village of Vergina. In the large chamber and antechamber

Intricately worked gilded silver quiver once enclosed leather sheath and is embossed with scenes

Archaeological Museum, Thessaloniki

of warfare. It and other items on these two pages were uncovered in the striking find at Vergina.

Archaeological Museum, Thessaloniki

Thickly rusted cuirass of gold-decorated iron was too fragile to make tour of U.S. cities.

Pair of gilded bronze greaves (left) are said to have belonged to Philip, whose legs didn't quite match.

Archaeological Museum, Thessaloniki

Gilded silver diadem, some eight inches in diameter, possibly Philip's, has adjustable sliding band.

he found not only an array of armor and a gilded silver diadem, but two solid gold larnaxes, or funerary caskets, complete with bones and cloth of royal purple and a wreath of gold (p. 126). He also discovered inch-high ivory portraits, two of which he identifies as likenesses of Alexander and Philip II. Professor Andronikos argues that the tomb was built for Philip, that the bigger larnax contained his bones, his wreath. The second casket, he suggests, was perhaps that of Cleopatra, last of Philip's several wives. No inscription supports these conclusions, but Professor Andronikos ridicules the suggestion that it may be merely the tomb of a very wealthy nobleman. "Even in those days gold was not found in the street," he said. "This is something unusual. It's something exceptional."

The bones have stayed behind in Greece, as have the smaller larnax and the gold-decorated, rusted cuirass too fragile to send abroad. But the larger larnax bearing the sunburst emblem attributed to Macedonian royalty, as well as the diadem and the gold wreath adorned with oak leaves and acorns, has come to America.

To fit heads or hairdos larger and smaller, the cylindrical hoop of the diadem is adjustable (above). "The official diadem of a king," said Miss Rhomiopoulou. "It was worn to indicate the ruler. We knew this from portraits of kings on coins, but we had never found such a diadem. Now we have it."

Those entrusted with so evocative a treasure must have been drawn to do more than admire it from afar. Had Miss Rhomiopoulou tried it on? Uncharacteristically, she paused and evaded the question. Had

Archaeological Museum, Thessaloniki

Lavishly embellished bronze krater from Derveni celebrates marriage of Dionysus and Ariadne.

anyone else tried it on? "Andronikos tried," she said, "and some minister, I can't remember which one."

Miss Rhomiopoulou was on temporary duty in Athens, at the Ministry of Culture, preparing the Alexander show. She expressed impatience with the notion that the exhibition was not exactly about Alexander. "The Vergina items belonged to Alexander's father," she insisted. "Alexander lived with these items when he lived with his father."

In his vast neighboring office, Nicolas Yalouris, Greece's general inspector of antiquities, held the line no less firmly. "Alexander created the conditions favorable for artistic creation," Dr. Yalouris said. "So we cannot say that because Alexander did not write tragedies or create art he was not responsible. He gave the élan that lasted till the end of the Hellenic period and even later, and that influenced almost all the great artists who followed."

On his military campaigns Alexander took physicians, surveyors, prospectors, botanists, artists, actors, musicians, poets, astronomers, philosophers and historians prepared to inflate the reputation of their patron. Ordering the construction of temples, and founding cities that he named after himself, Alexander provided work for architects and craftsmen and artists.

As he marched through Asia, Alexander presided over festivals of the arts, and he left behind him a taste for Greek customs, games, language and theater. Greek learning spread abroad and Greek philosophers influenced foreign thought.

A Greek school of archaeology

To suggestions that Alexander was a willing, even enthusiastic, leader of slaughter and pillage, Dr. Yalouris rejoined: "When didn't such a thing happen? During war, atrocities are unavoidable. But these atrocities can't overshadow the positive accomplishments of Alexander."

"Before Alexander we knew about Macedonia only from outside sources," Professor Andronikos suggested. "I knew of that Macedonia through the eyes of Demosthenes, but he was an Athènian fighting for his city against Philip. Even the archaeological sources were not so many. Before the last war only a few pieces had been found in northern Macedonia. There were schools of archaeology. The German school did Olympia, the American school the Agora in Athens, the French school did Delphi and Delos, the British did Knossos, but after the war there were maybe three archaeologists in northern Greece. Now there are many more, they are well organized, and we have a good idea of what the standards of culture and civilization were in the fourth century."

Detail of marital revelries shows the great technical mastery of the early Greek artisans.

The vessel, of a type used for mixing wine and water, contained bones and ashes of a man when found.

Archaeological Museum, Pella

Archaeological Museum, Veroia

Graceful terra-cotta statuettes of Athena wearing horned helmet (left), Aphrodite holding cithara, famed Greek lyre (center), and Aphrodite again, with a cornucopia and ribald mask of a leering silenus.

This seemed the moment to ask the question. Had Professor Andronikos really tried on the diadem? He, too, evaded the question and suggested that the diadem was too big for his head. But he admitted trying on the great gold wreath, noble and lustrous and certain to rouse a host of associations in the mind of an archaeologist or historian. How did it feel? "Heavy," he replied.

The professor was ensconced in his university office, and thanks to his Vergina renown he was in danger of having larger quarters forced upon him. On one wall hung color photographs of the Vergina treasures, and looking at them Professor Andronikos said, "If you see the Scythian and Thracian finds, and you make a comparison, you can see how this is on a different level. The Scythian and Thracian objects are often the work of Greek artisans, but were not for Greek clients, and the quality is absolutely different."

Professor Andronikos spoke of Alexander as a great general, a visionary, a man not only of imagination but of inspiration. "Alexander wanted, first of all, not only to conquer the world—of course he wanted to conquer the world—but to know, to go to the end of the world, to go on and on to see where the world ends," Andronikos said. "Of course there were atrocities, but that was the kind of war that was fought then, and even today. Herodotus suggests that there is no good war or bad peace, because during war parents bury their children and during peace children bury their parents. War is an unnatural thing; peace is a natural thing. Peace is a rule of life—that children should bury their parents, a rule like the sun rising."

To underline his point, Professor Andronikos then told of the time he served with Greek forces in Palestine during World War II. Sent off to find firewood, he returned and said he couldn't find any. "Stupid!" his sergeant railed. "What about those orange trees?"

"I think no people are civilized during a war," Andronikos said.

Millennia after Alexander, artists seized on his chronicles to depict him in triumph and in tolerance—engaging the great Indian rajah Porus in grandiose battle, visiting the captive family of the Persian emperor, marrying the daughters of erstwhile enemies. One of the paintings, by the Greek naive artist Theophilos [Hatzimihail], depicts a mustachioed Alexander looking for all the world like a soldier in the Balkan Wars of 1912-13. Shown in Thessaloniki was the perfect companion piece: a painting by Yannis Tsarouchis of Theophilos dressed as Alexander, looking for all *his* world like the archetypal Sad Sack. There is also a lithograph by the 19th-century French artist Honoré Daumier of the encounter between Alexander and Diogenes, the philosopher who scorned worldly goods, lived in a bathtub and went about in daylight with a lantern, looking for an honest man.

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When the great Alexander asked Diogenes if he wanted anything, Diogenes asked him to stand aside, since he was blocking the sun.

How pedestrian of Alexander's biographers not to have suggested, instead, that their hero commanded the sun to move. Was it not Alexander who caused the sea to "part" and allow him unhindered passage? Was it not Alexander who, when his officers objected to starting a war in the month of Daisios, ordered the calendar revised and a second month of Artemisius to replace it? He would not allow weather or terrain to stand in his way. "Fortune," suggested Plutarch, the Greek biographer who lived four centuries after Alexander, "by giving way to his insistence on every occasion, had made his resolve unshakable."

Plutarch wrote that Alexander, who traced his descent from the gods, was determined to prove that boldness could triumph over fortune, and courage over superior force: "He was convinced that while there are no defenses so impregnable that they will keep out the brave man, there are likewise none so strong that they will keep the coward safe."

In the lineage that owed less to mythology than to the facts of life, Alexander was the grandson of King Amyntas III. Short and ruddy, Alexander was born a scrapper who won military victories in his teens and who inherited the kingdom in 336 B.C., when he was hardly out of his teens. To counsels of moderation he opposed the dictates of audacity, setting off at once to conquer as no man had conquered before. Ranging north and west, he subdued hostile tribes as far as the Danube. When Thebes, back in Greece, rebelled and then failed to surrender quietly, he plundered and razed it. With the great military forces inherited from Philip, who had reorganized, rearmed and retrained them, he proved himself a master of siege warfare and a tactician second to none.

Vowing vengeance for the sacrilegious destruction of Greek temples by the Persians, who ruled a vast territory stretching from Asia Minor to India, Alexander and his army crossed the Hellespont in the year 334 B.C. and set forth to subdue all of Asia. In forced marches, covering great distances at breakneck speed, leading his men in pitched battles and guerrilla warfare, Alexander was many times wounded but was never dissuaded from setting an example of valor that only the most gifted and foolhardy could hope to emulate. Through heat and cold and drought and hunger, scaling mountains, braving flood and disease, he gathered the laurels and loot of victory upon victory. Overwhelming an army that outnumbered his forces, he liberated the Greek cities of Asia Minor and threatened the very heart of the Persian empire. While he was besieging Tyre (in modern Lebanon), envoys arrived from Darius III offering to cede all the land west of the Euphrates, as well as an enormous ransom for the release of his captive family. "If I were Alexander, I would accept the terms and end the war," said Parmenio, who was Alexander's deputy. "So would I," Alexander rejoined, "if I were Parmenio."

The ways of a conqueror

Alexander took Gaza, conquered Egypt and founded Alexandria on the western edge of the Nile delta. When advised to attack Darius at night before the famous battle of Gaugamela, he said, "I will not steal my victory." He entered Babylon and took the second Persian capital, Susa, where in a grand, symbolic gesture, he sat on the throne of Darius. He put Persepolis, the ceremonial center of Persia, to the torch, possibly to avenge the actions of Xerxes the Great who, the century before, had pillaged Athens and invaded Macedonia.

After more than eight years of plunder and 11,000 miles of arduous march that brought them no nearer home, his men finally mutinied—or at least intimated incipient despair. Raging at the fates that forced him to turn back just when he seemed to be nearing the great ocean at the eastern edge of the world, Alexander consoled himself with dreams of finding other worlds to conquer and, it was rumored, of sailing around Africa, meanwhile applying himself to the task of uniting Macedonians and Persians into a new ruling class through intermarriage.

He died aged 32, in 323 B.C., of fever, from natural causes, from poison, or perhaps from drink (Dr. John Maxwell O'Brien of Queens College, New York, has just published a study in which he concludes that Alexander exhibited "the classic symptoms of acute alcoholism" in the last seven years of his life).

He blazed so brilliant a trail that Caesar would

Fold out →

weep at the realization that *he* was getting nowhere at an age when Alexander had conquered so much. Alexander himself, not surprisingly, considering his character, had dreaded the thought that some future conqueror would outdo his achievements; in fact, after his death, his empire quickly fragmented.

Was there ever such a man! In *Alexander the Great* (1973), Robin Lane Fox, the historian, suggested that a true account of Alexander required a search rather than a story. He noted that sources are unreliable and scarce: "More than twenty contemporaries wrote of his career, but not one of their books survives in its original and only one extract from a letter of Alexander is genuine beyond dispute. Four hundred years or more after his death, two historians and two abbreviators interwove or cut down his original histories and it is from their long narratives that his life must mostly be recovered."

Superb floor mosaic from Pella, its colors the natural ones of pebbles employed, is not included in

And yet anyone who writes of Alexander—even Robin Lane Fox, while insisting on a search and lending this exhibition its purported theme—lapses at times into confident statement. To the suggestion that knowledge of Alexander is tenuous, Dr. Yalouris strenuously objected: "Since Thucydides [fifth century B.C.], historical accuracy has been *sine qua non*. We could say that Herodotus [just before Thucydides] was still connected with mythological conceptions. But since then, everybody has followed the method of Thucydides."

Professor Andronikos did not venture quite that far. He suggested that myth was an inevitable portion of history.

New excavations may cast additional light on the age of Alexander, but it may take more than archaeology to recover not the treasure but the measure of the man.

the American show. It dates from about 300 B.C. Some suggest it shows Alexander and his friend Craterus.

Archaeological Museum, Pella, Photograph by Spyros Tsavdaroglou

The Chairman of the Board tells "The Chairman of the Board" why it's time for Imperial.

Lee Iacocca talks to Frank Sinatra about the future of luxury cars in America.

On July 18, 1980 Frank Sinatra, the entertainment industry's "Chairman of the Board," joined Lee A. Iacocca, Chairman of the Board of The New Chrysler Corporation, at the first public exhibition of America's newest luxury car, the 1981 Imperial.

This new Imperial is an unusually timely automobile. In price and size it is comparable to Cadillac's Eldorado and the Continental Mark VI. But it is a newer automobile than its competitors and, in significant ways, it is substantially different from either of them; it is these differences that make the Imperial the unique automobile it is.

After opening the exhibition and viewing the new Imperial, Sinatra and Iacocca spent some time discussing what America needs in a luxury car today and how this new Imperial fills those needs.

Sinatra: When you build a luxury car, where do you start? Do you have a design in mind? How do you lay down the specs for a new luxury car?

Iacocca: You try to build a luxury car that's better than the competition. Say you take your leading potential competitor and you might say, 'I'm going to give a customer 105 percent of this guy's riding comfort. Or 100 percent of his cornering ability.' You can set your sights on what the people are already buying.

Sinatra: Is that what you did with the new Imperial?

Iacocca: Sure. But our standards for this one were based more on what the people need today than on what the competition is giving them. You know, times have changed in the automobile business.

Sinatra: You mean the energy crunch.

Iacocca: Partly. That's why today you have to try to build a car that's the right kind of car for now and, hopefully, for tomorrow as well. Now, you've owned a lot of cars.

Sinatra: You'd better believe it.

"...the styling actually helps the car perform the way you need a car to perform these days."

Iacocca: What do you think an American luxury car should be today?
Sinatra: I don't know where to start.
Iacocca: Start with the way it should look.
Sinatra: Well, first of all, I'd want it to look simple. I like a clean look. Because I believe that a lot of chrome looks dated. I think things are getting cleaner and simpler looking and that's how it should be.
Iacocca: Agreed. That's why we tried to keep the Imperial as uncluttered as possible.
Sinatra: It looks rich, Lee. And the shape—it's very clean.
Iacocca: It's what we call slippery.
Sinatra: Slippery?
Iacocca: Slips through the air. In the wind tunnel they give it a number they call a drag coefficient. Tells you how aerodynamic the car is. The lower the number, the better you're doing.
Sinatra: Well, you've come out of the wind tunnel with a very elegant looking automobile.
Iacocca: What pleases me more is that the styling actually helps the car perform the way you need a car to perform these days.
Sinatra: Fine, but what about the things I can't see? What about engineering? You guys had a big reputation for engineering.
Iacocca: I believe we're still ahead. But engineering a car has changed radically in the last ten years.
Sinatra: Come on, Lee, this country can put a man on the moon, but we can't build an automobile right. Where's our technology when it comes to things we use every day?
Iacocca: I hear you. But I've been in this business a lot of years and when I look at the new Imperial, I see an electronic marvel.
Sinatra: An electronic marvel? What does that mean?
Iacocca: Okay. You mention the space program. Our electronics division down in Huntsville, Alabama, was a prime contractor on the Redstone missile and the Saturn Apollo program. We're an industry leader in automotive electronics, going back to electronic ignition. There are several hundred electronics experts down there in Huntsville and after we switched them from space work to commercial work, the Imperial is one of the things they went to work on.
Sinatra: What did they do?
Iacocca: Worked with our engineers up here in Michigan on developing our system of Electronic Fuel Injection.
Sinatra: That's not new, Lee. Fuel injection's been around for years.
Iacocca: Not like this. The Imperial has the first continuous flow fully electronically controlled fuel injection for any production automobile built in the world.
Sinatra: Why is that good?
Iacocca: First of all, it controls both the fuel delivery and the spark advance, based on information it gets from about a dozen sensors that monitor everything from engine temperature to barometric pressure in the atmosphere. They feed all this information into what we call the Combustion Computer. Then the computer figures the best possible spark advance for all these conditions and the best proportion of air to fuel, and meters out the exact amount you need.
Sinatra: What's in it for me?
Iacocca: Four things. First of all it starts by just a turn of the key. Second, you get the smoothest idle, even on cold mornings. Number three, there are practically no balks. And number four, practically no stalls.
Sinatra: Sounds terrific.
Iacocca: And that's only the half of it. I tell you, we've never had electronics like this. Now, you've got to admit, this instrument panel is rather unusual.
Sinatra: I've driven a lot of cars and I've never seen anything that looked the least bit like it. But why does a digital instrument panel make the Imperial a better car?
Iacocca: Because it makes you a smarter driver. Tell me, what do you need to know when you're driving a car?
Sinatra: I want to know how fast I'm going. How far I've gone. How much gas I've got left. What time it is. That's about it.
Iacocca: Okay. This instrument panel shows you all of that in words and numbers.
Sinatra: No gauges?
Iacocca: No gauges. This is the only production built American car with a completely electronic digital instrument cluster.
Sinatra: And what do the buttons do?

"...when I look at the new Imperial, I see an electronic marvel."

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Size and price: comparable to Cadillac Eldorado and Continental Mark VI. (16) EPA est. mpg. 26 est. hwy. mpg. Use these estimates for comparison. Your mileage may vary depending on speed, weather and trip length. Actual highway mileage will probably be less. Calif. ests. lower.

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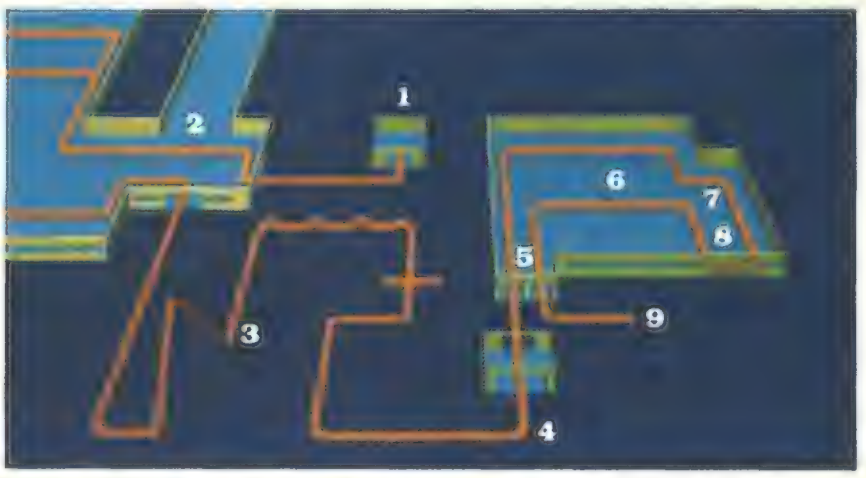
Iacocca: They turn your instrument panel into an Electronic Communications Center. Push button number one and your speedometer reading changes from miles per hour to kilometers per hour.
Sinatra: Not bad.
Iacocca: Push button number two and your electronic chronometer gives you the date instead of the time. Button number three turns the whole chronometer into an electronic timer that tells you how long you've been driving.
Sinatra: What about how far I've gone?
Iacocca: That's button number four. Push it and the electronic odometer shows you how far you've gone since you started. The next button tells your average speed.
Sinatra: And it's all in miles or kilometers?
Iacocca: That's right. Button six shows how far the gas in your tank will take you under present driving conditions. Number seven shows how many miles you're now getting to the gallon. And number eight gives your miles per gallon over your entire trip.
Sinatra: I've never had that on any car. That's fantastic.
Iacocca: There's more.
Sinatra: More buttons to push?
Iacocca: No. This part is all automatic. If either half of the dual hydraulic brake system is defective, a light goes on. If the emergency brake is on, this lights up. If your oil pressure or battery voltage are too low, or your engine temperature is too high, these lights come on.
Sinatra: That's a lot of lights.
Iacocca: We've got chimes, too. If you don't buckle up, your Imperial will chime at you. Leave the key in the ignition and it beeps. Leave the lights on and it makes a tone.
Sinatra: Very musical.
Iacocca: I told you we built it for you, Frank.
Sinatra: What about your other customers? Is this stuff all standard equipment on every Imperial you build?
Iacocca: Frank, the only option on the Imperial that is not standard is a power sliding roof. Every other luxury is standard. And there are more luxuries standard on the Imperial than any car in America. I've got even more luxuries than *you* would ask for.
Sinatra: Try me.
Iacocca: You try me. What features do you want your car to have?
Sinatra: Start with music.
Iacocca: Your choice of four sound systems, standard. All stereo. All with six speakers. What else do you want?
Sinatra: Power steering, power windows, power door locks, power seats.
Iacocca: Of course.
Sinatra: What about speed control? I think that's important.
Iacocca: Of course.
Sinatra: What about leather upholstery?
Iacocca: Frank, this is the only car in the world with an interior by Mark Cross. It's even got a built-in garage door opener and a hood ornament of Cartier crystal.
Sinatra: You're not fooling around with quality on this baby, are you?
Iacocca: I wanted to have a quality automobile to sell. And I wanted to be able to give it a basic limited warranty twice as long as the competition's.
Sinatra: How long is that?
Iacocca: Two years or 30,000 miles, whichever comes first. It covers all parts except tires, all labor and all scheduled maintenance. Our rust warranty lasts a full *three* years.
Sinatra: Let me get this straight. I don't even pay for an oil change?
Iacocca: That's right. You're going to have to see the Imperial warranty for the details.
Sinatra: That kind of confidence must have taken guts, Lee.
Iacocca: I know what went into it. Look, every one of these Imperials gets a five-and-a-half-mile test drive by an expert. We built a Quality Assurance Center where the whole vehicle gets a going-over to make sure that nothing gets out that's not first-rate. When an inspector there signs off on the car, the signed papers actually come to the buyer with the car.

Imperial Quality Assurance Program starts with preselected parts (1) and special care assembly (2), goes on to a 5.5-mile test drive (3), hot engine checks (4), water checks (5), checks of suspension, steering (6), electrical systems (7) and metal finish (8) before final sign-off (9).



"I wanted to have a quality automobile to sell. And I wanted to be able to give it a basic limited warranty twice as long as the competition's."

Sinatra: I think there are a lot of people waiting for a new luxury car like this one, Lee.
Iacocca: I've got a whole bunch of Imperial dealers all over the country who are just waiting for them, Frank.

For the name of the nearest Imperial dealer call toll-free 1-800-521-7272. In Michigan 1-800-482-6838.

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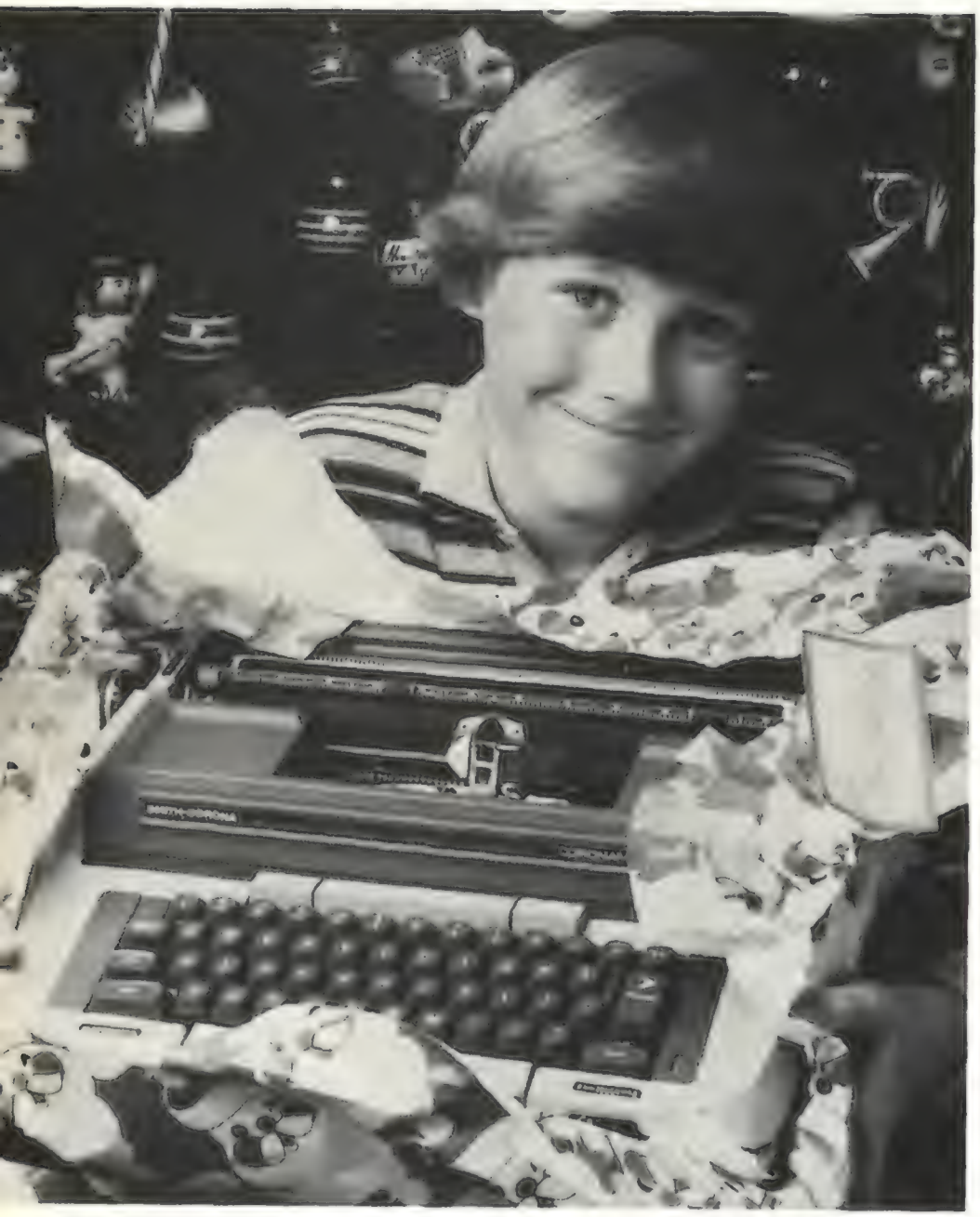

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Of course having a Smith-Corona isn't going to make him into a genius. But it is going to help him with his papers.

They'll be easier and faster to write than in longhand. And they'll look neater and be easier and faster to read. (What teacher won't appreciate that!)

There's something else you ought to know about buying your student a Smith-Corona. Like a solid investment, it will pay off year after year after year. (He'll even be taking it to college with him!)

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First of all, Smith-Corona has an exclusive cartridge ribbon system. With the cartridge correction ribbon you can change words, or even whole sentences, as well as correct individual characters.

You can also use carbon film ribbon to produce extra crisp and sharp typing, like the big expensive office machines. And changing ribbons is a snap—literally.

Next, notice that a Smith-Corona sounds professional—solid and smooth, like the fine precision machine it is.

Now, look at the way it types. Smith-Corona type marches across the page evenly, smoothly, cleanly. Not one single letter out of line or out of step.

Give your student a Smith-Corona. Teachers will listen to every word it writes.

Patented Correction Cartridge

Smith-Corona

Garbage container, standardized in Switzerland, is hoisted up to a truck. Plastic garbage bags, too, are standard to help organize the collection. The garbage produces heat for Zurich.

By Stuart Griffin

Waste equals grist for the mill as Swiss take up recycling

Garbage turns to fuel, sewage to steam and glass returns to glass as thrifty residents of Zurich produce new energy

Switzerland, which gives the world dairy products, fine watches, precision machinery, pharmaceuticals and solid banking practices, is gaining recognition for an industry born of necessity in these times of energy crisis: recycling. Denmark and tiny Luxembourg lead today in pounds of waste processed per capita, but now the Swiss are taking huge strides in getting heat and fuel out of garbage, in producing hot steam from household and human refuse, and in melting down and reusing aluminum, paper, plastic and glass. (Indeed, Switzerland is 20 years ahead of the United States, which, along with Brazil and the Soviet Union, is still in the Dark Ages as far as recycling is concerned.)

Tucked away in northeast Zurich is the Josefstrasse plant, a heat and power station dominated by a block-like incinerator and a 33-foot chimney rather like an alpenhorn stood up on its bell.

Josefstrasse feeds steam from burning waste into the satellite circle of apartment house complexes, public buildings and plants for their use as heat and electricity. To its furnace, a fleet of 47 household and bulk refuse collectors trucks plastic bags daily from

Photographs by Paolo Koch

At the Hagenholz plant, steaming hot ash from the furnace is piled up awaiting further processing.

Towering inferno of Josefstrasse's incinerator handles 320 tons of garbage a day, turns it to steam.

collecting points all over this old and beautiful city.

Zurich has been burning garbage for heat since 1904 and its new system, begun in 1978, ranks among the world's most sophisticated. Its furnace can take care of 320 tons a day, and its boiler is designed to produce 45 tons an hour of superheated steam at 420 degrees C. Enough space exists, moreover, for a second unit to double this capacity. Dust and evil smells are controlled. A fully automated main furnace ensures constant 24-hour steam output, but should a breakdown occur, steam or hot water can be furnished immediately by a trio of boilers fired by natural gas or light fuel oil.

Max Baltensperger, head of the Department of Sanitation for this city of 380,000, makes his first telephone call by 7:30 each morning. A would-be interviewer, literally roused from sleep, is asked: could he be in the Swiss executive's office in ten minutes? This Zuricher is rugged, heavy shoulders rising from a still thin waist, in the build of former athletes now in their mid-to-late 50s.

"Garbage"—he speaks loudly, as if over that furnace's roar—"is today the ultimate material to replace oil, coal or gas. Four tons equal one ton of oil, and from this one ton of garbage we can get three tons of steam. Garbage has grown from 16,859 tons in 1905 to more than 240,000 tons. Consider that in fuel-saving terms."

A veteran free-lancer living in England,
Mr. Griffin wrote about the reenactment of
British battles in the August 1975 issue.

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Purified black sludge from a sewage plant, used as fertilizer, is sprayed on a field of corn.

Swiss Girl Guides and Boy Scouts transfer truckload of waste paper to waiting freight car for recycling.

Zurich's second incinerator plant—Hagenholz in the Oerlikon district—is less modern, but bigger than Josefstrasse, three furnaces operating, not one. Capacity is greater, too, but its generation of heat is less. Mountains of ash disfigure both areas. Ash contains non-burnable metals and glass residues and is further processed with magnets and screens. This partial recycling provides a gravel substitute for railway roadbeds and surfacing for forest roads, after being crushed into manageable size, and iron for remelting. (Some environmentalists worry that salts and chemicals in ash may harm vegetation and groundwater.)

Close to Josefstrasse is the Zentralwäscherei—the canton of Zurich's laundry. Using Josefstrasse's 14-atmosphere pressure steam, it does the laundry for 40 hospitals with 5,000 beds. Zentralwäscherei is a spaghetti-tangle of laundry-handling machines; a chain conveyor automatically transports the laundry containers with 8,000 sheets, 300 nurses' and doctors' gowns, heaps of office, kitchen and operating theater garments. Thanks to Josefstrasse's piped-in steam, the Wäscherei saves more than four tons of oil a day.

The municipality runs a modern meat-meal plant at Hagenholz. Here slaughterhouse refuse, meat waste, even cadavers of farm animals and household pets are recycled into granulates and powders for protein-rich animal-feed and fertilizers, the fats going into soaps and detergents. The air from this plant is used for burning the garbage in the incinerating plant, and at 800 degrees C the smell is destroyed.

Sewage becomes rich fertilizer

Two miles or so from Josefstrasse is the Werdholzli sewage treatment plant, one of Zurich's two wastewater purification plants. Its operation is graphically described by Hans Peter Heise, a fringe-bearded technician: "Sedimentation tanks send solids to the bottom. The water is dirty, but impurities are removed, and the treated water goes into the River Limmat. The sludge goes into digesters where we get methane gas that's used for heating, also for dehydrating and pasteurizing the sludge. Excess methane is piped to Josefstrasse and burned to generate added electricity."

City sewage sludge, unlike manure, only recently has come into wide use. Many countries have rigid laws against it, fearing infection and disease. Werdholzli's costly purification-pasteurization system, however, turns residues into valuable fertilizers. This takes energy, but fortunately the methane gas is on hand, a cheap substitute for fuel oil.

"Processing and depositing sewage sludge on fields," says the Werdholzli engineer, "is cheaper than drying, burning and dumping it. Besides, it's best for the environment. Switzerland saves on importing fertilizer

THE CASE OF
·THE·
DANCING DEER

"Mere scotch! Are you daft?" railed my rotund friend MacBerth. "I want Glenfiddich." The steward shrugged an apology. It seemed the celebrated single malt from the valley of the deer was not on our itinerary.

"No Glenfiddich!" moaned Mac. Then a sly grin danced upon his lips. "A temporary dilemma—and purely academic!" he winked, bolting from the carriage. An hour passed without his return; I ventured off in pursuit.

In the corridor I encountered an odd chap clutching a sheepskin pouch. From the clinking sound he made as he passed, I judged his bag to be full of bottles. And, if my ears didn't deceive me, triangular bottles at that.

My suspicions aroused, I trailed the fellow into a private car, only to be startled by a troupe of sprightly stags. 'Professor Dantler's Dancing Deer,' read a dangling banner. I promptly made tracks for the door.

Suddenly, I was confronted from behind. "Sorry about the hold up," chortled my assailant. Peering down I saw, not the barrel of a gun, but the nozzle of a bottle. MacBerth had found his Glenfiddich.

"Elementary," explained Mac, as we hoisted our glasses. "Who but the wise Professor would have the single malt from the valley of the deer?" A bizarre bit of logic: but the solution was eminently palatable.

GLENFIDDICH® SINGLE MALT
Scotch Whisky

Glenfiddich Highland Unblended, Single Malt Scotch Whisky. 86 Proof. Bottled in Scotland. © William Grant & Sons, Inc., New York, N.Y. 10020.

Even a garbage container can benefit from art. In some parts of Zurich children paint them.

and looks forward to using such wastes to help produce gasohol."

The Swiss are a tidy people. They put a high premium on orderly everyday life, and avoid disruption and dislocation. They welcome the centering of all required industrial activity in one well-kept district.

Private industry, as well as residents, benefits from tapping heat and electricity sources from Josefstrasse. The "Toni" Molkerei, one of Europe's largest dairy-products processing plants, will make some 22 million bottles for yogurt, cream and other foods in 1980. This year the dairy-food company hopes to be hooked up to the Josefstrasse plant, which should mean considerable savings in heat costs for washing and reusing the bottles.

The Federation of Migros Cooperatives is one of Switzerland's largest, most profitable multiline business cooperatives and its Zurich branch was one of that city's first plants to operate its own heating incinerator. Migros opted for a Josefstrasse linkup in 1979. Now its milk-pasteurization and packaging, cheese-processing and packaging, banana and meat-packaging plants rely on Josefstrasse. It also practices its own recycling—compressing used cardboard and sending it to paper mills. Large bones from its meat division become glue; fats turn into soap; meat wastes not fresh enough for humans become pet food or go to the meat-meal unit to be boiled and sterilized; fats are distilled and the remainder is dried and crushed into powder. The cycle is complete when meat meal is consumed by cattle, pigs and chickens.

At Niederglatt, outside Zurich, Dr. Hans George Erne told about the recycling of aluminum. "We collect all waste aluminum, new scrap from processing plants and foundries, and old scrap. Aluminum is so expensive that recycling is a real necessity. Fortunately, it is a most recyclable material.

"Plastics, however, they are not so easily recyclable, losing some original quality. Glass does not lose its original quality, but paper . . . its fiber grows shorter and shorter. In recycling aluminum we change form, not quality. Aluminum cans are recycled into new sheet aluminum, from which new cans are made. These again are recycled, indefinitely."

Some ten miles north of Zurich is Bülach. Here one meets Urs Ruprecht, one of the fathers of Swiss glass recycling. An animated man with a twinkle in his blue eyes, he speaks English with relish.

Glass made with a large amount of cullet, or waste glass, saves more than 20 percent of the energy needed for new glass manufacture, Ruprecht says. Most cullet can be recycled if it is sorted by color. So special blue bins with separate color compartments now draw waste-glass collectors from all over Switzerland.

Ruprecht foresees the nearly total withdrawal of returnable bottles. These require thicker glass to withstand continued use, and so are heavier to transport. Also, many bottlers want special shapes for special products, and that means one-way containers.

Ruprecht's organization, Vetropack Ltd., promotes returnables wherever applicable, with one-ways filling the gap. But he feels the future belongs to "combi-bottles," very lightweight, yet sturdy, which may be used as returnables or one-ways depending on the needs of the market.

Three-quarters of Switzerland's more than six million inhabitants participate in waste-glass collection, and come up with better than 28 pounds of glass per capita. "Not too bad a record," claims Urs Ruprecht, "for a country where two-thirds of communities cover four-fifths of population, and where the 'fifth fifth' lives in so mountainous an area that collection is hard to realize. This puts us on rather a lonely peak but—forgive me—on a Swiss Alpine peak, if I may be so immodest."

Waste glass for recycling is heaped at collection depot. It will be sorted by color to assure quality.

MORTGAGE MONEY: WHO NEEDS IT? WHERE WILL IT COME FROM?

You can't always choose the best time to buy a new house. The new job won't move closer. The children won't stop growing. So you may find yourself looking for mortgage money in times like these, when mortgages are hard to find and even harder to afford.

Mortgage money becomes more scarce and costly for many reasons, but generally it is because savings institutions are not able to attract sufficient deposits and have to pay more for the funds they do attract. That's why fewer loans are being made and the requirements are more stringent. You're ready to move, but you're caught in a credit crunch.

CUSHIONING THE CREDIT CRUNCH

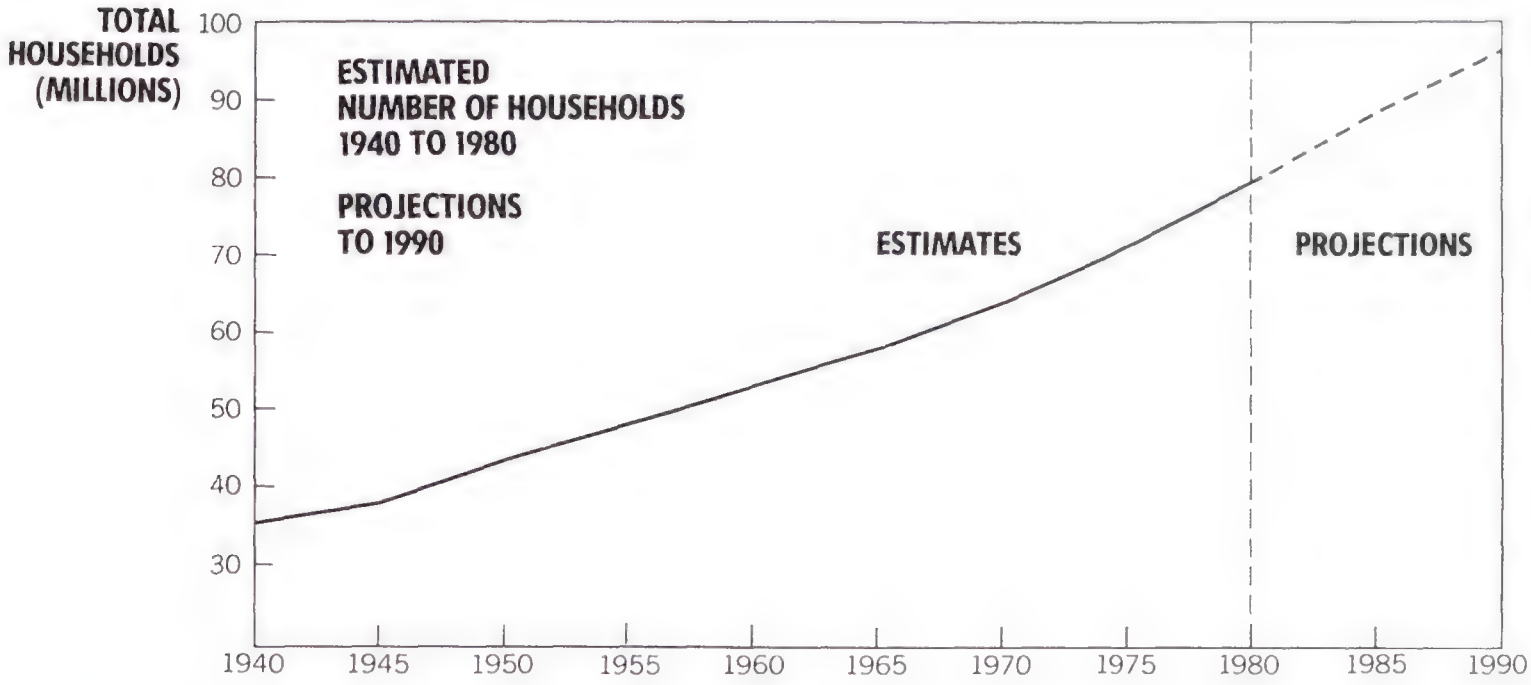
This has happened off and on for the last 15 years. Yet millions of families found their mortgage money. More than a trillion dollars worth of new mortgage loans have been made since 1965. One reason is that there is a huge secondary market for mortgages, a complex system of private businesses and government agencies which buys mortgages from the original lenders, thereby replenishing their supply of money. One part of that market is the Federal National Mortgage Association, or Fannie Mae, a shareholder-owned corporation working in the private sector.

THE WINDOW THAT NEVER CLOSES

When funds from other sources dry up or are limited, Fannie Mae is still buying. Unlike banks and savings and loans, which usually must depend on funds from local depositors, Fannie Mae can tap capital markets worldwide. The money we borrow is then "recycled," used to purchase mortgages, replenishing the supply available for new loans.

Since becoming a private corporation in 1968, Fannie Mae has purchased mortgages worth $65 billion representing financing for close to 3 million housing units for moderate- and middle-income families. That makes us the largest single supplier of funds for home mortgages.

Knowing that Fannie Mae is always there has created a foundation of confidence for the housing industry, providing needed stability in what had been a boom-or-bust business. During 1979, for example, Fannie Mae purchased $10.8 billion worth of mortgages, providing financing for more than 230,000 homes.



THE BABY BOOM IS HOUSEHUNTING

Regardless of whether money is tight or easy, interest rates high or low, the demand for home financing will be increasing. The babies born during the post-war boom are ready for places of their own. Nearly 32 million Americans reached 30 years of age during the '70s. During the '80s, 42 million will reach this prime home-buying age.

Additional demands for mortgage funds will come from some new buyers in the housing market. Women who head households, the elderly and single people, for example. Minorities who had found opportunities scarce or non-existent now have the protection of the law to help them enjoy homeownership.

We believe that by always keeping our window open in the secondary mortgage market, Fannie Mae is also keeping the door open to homeownership for many Americans.

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FANNIE MAE America's Mortgage Resource

Luis Barragán, in a typically reflective mood, on the roof terrace of his house which, like most of his work, is an ordered place "for shelter against the aggressions of the modern world."

By Andrea O. Dean

Luis Barragán, austere architect of silent spaces

This year the Pritzker architecture award, the Nobel Prize of the profession, went to a poet who has given shape to solitude

A harmony of geometric angles, planes and clear colors defines the architect's home in Mexico City.

Throughout his long career, Mexican architect Luis Barragán has designed no large public monuments, museums, theaters, libraries, housing projects, corporate or government office buildings. Until very recently, in fact, he has been largely unknown except to a small group of cognoscenti. It came as a surprise, then, to hear of Barragán's selection as this year's winner of the coveted international Pritzker Architecture Prize. Who, people asked, is Barragán? And what is the Pritzker Prize?

Initiated last year, the annual award was sparked by an observation by the late King Gustavus VI Adolphus of Sweden that Alfred Nobel had omitted some important disciplines from his bequest, fields of human endeavor such as architecture and archaeology, which should be recognized in a similar way. The Hyatt Foundation, led by its founding Pritzker family—one of the nation's richest and least known wealthy clans—was persuaded to sponsor the equivalent of a Nobel Prize for architecture. For architecture, as art historian Kenneth Clark has said, "is one of the most important of all human activities" yet it has been "one of the least considered."

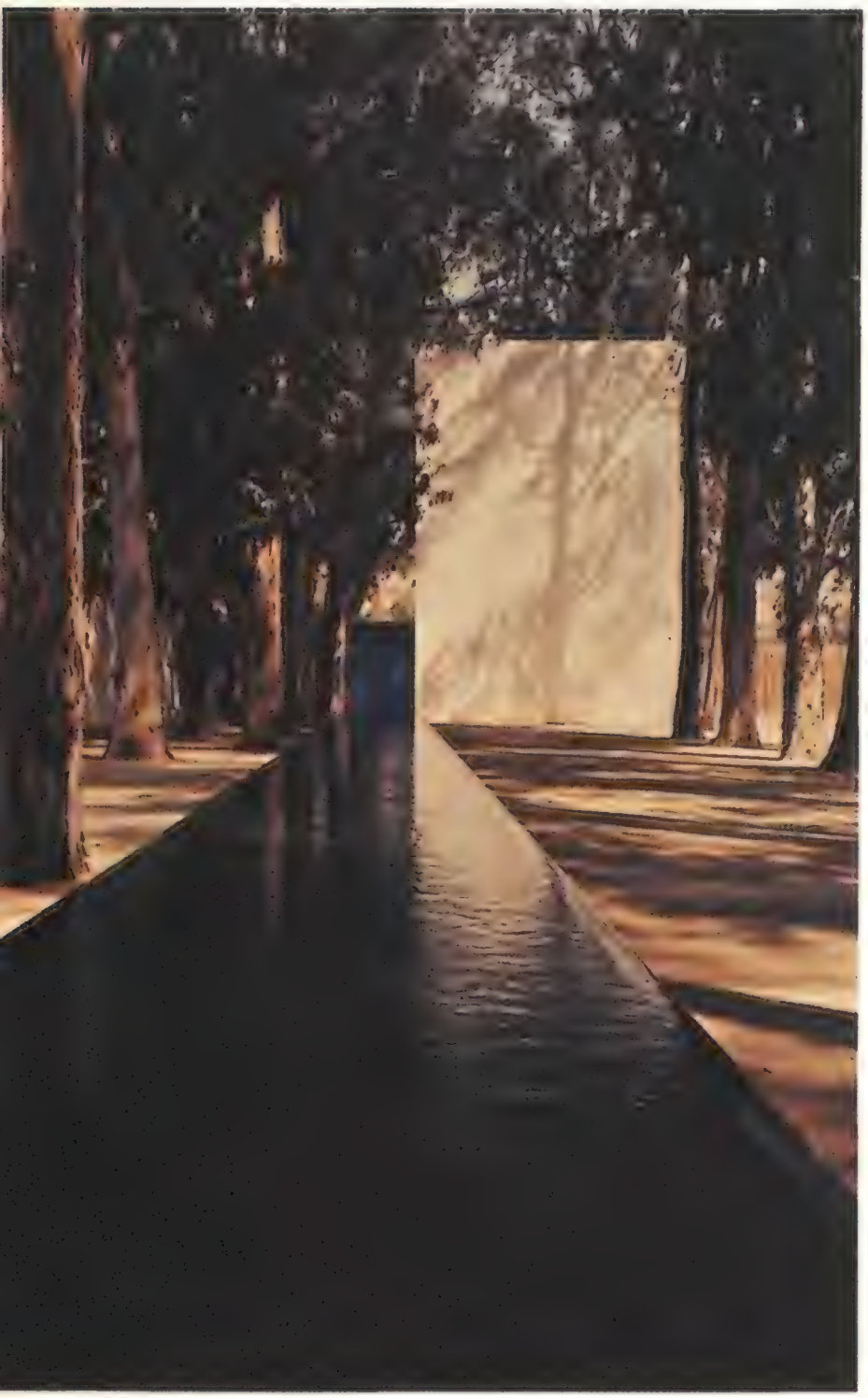
Lord Clark was among the jurors, all renowned men of art and culture, who composed this year's jury. The others were J. Carter Brown, director of the National Gallery of Art; J. Irwin Miller, architectural patron and chairman of the Cummins Engine Company, Inc.; architect Arata Isozaki; Cesar Pelli, architect and Dean of the School of Architecture, Yale University; and Philip Johnson (SMITHSONIAN, February 1975), recipient of the first Pritzker.

The contrast between last and this year's winners couldn't be more striking. In 1979, Philip Johnson was awarded the prize for "50 years of imagination and vitality embodied in a myriad of museums, theaters, libraries, houses, gardens and corporate structures." He is undoubtedly the most influential figure in American architecture today and has been at the epicenter of each storm that has struck it in recent decades. At 74 he is, today, more than ever the public man, witty, acerbic, outspoken.

Luis Barragán, by contrast, has worked virtually in isolation, avoiding all controversy, following no mentor nor prevailing school and attracting few followers —or detractors, for that matter. A giant, physically, at six and a half feet—though reduced now to a less towering height by age and illness—the 78-year-old Barragán has produced a relatively slender body of work. It consists almost entirely of small private structures and intimate gardens, jewellike and secluded, "places for shelter against the aggressions of the modern world," as he puts it. Barragán is a landscape architect as well as a designer of structures. Each of his completed projects is informed by an intensely private, haunting and singular vision, which he has patiently pursued and refined over the last 35 years.

His emphasis has been on conveying feelings of magic, surprise, amazement, mystery, serenity, silence, solitude—words Barragán uses repeatedly when ex-

Photographs by Armando Salas Portugal and René Burri



Elegant horse trough at Las Arboledas, a subdivision near Mexico City, was designed for equestrian activity.

plaining his design intentions. In awarding him the Pritzker Prize, the jury stated, "We are honoring Luis Barragán for his commitment to architecture as a sublime act of poetic imagination." How he translates poetic, even unfashionably mystical and surrealistic, notions into the hard stuff of architecture can be seen by looking at a few of his major, mature projects.

Barragán calls his El Pedregal, in Mexico City, "my most important and interesting work." The site for El Pedregal (the rocky place) was a stretch of purplish gray lava left by the eruption 2,500 years ago of the Xitle volcano and overgrown with strange rock flowers, cacti, pepper trees and *palo bobo,* or "crazy tree." The project began in 1945 when the architect, fascinated by El Pedregal's unearthly shapes, decided to transmute 865 acres of what was regarded as worthless, unusable land into a residential area respectful of the rock and lush vegetation. Barragán is mystically inclined and strenuously moral, but he has also enlisted his art in the service of raising land values. With the help of a realtor, Alberto Bustamante, he hoped to transform El Pedregal's lava desert into an elegant subdivision of Mexico City.

He began this effort with a stringent code requiring that native vegetation be preserved and new plantings

Suburb of Los Clubes, one of Barragán's equestrian projects, is noted for its imaginative high fountain.

San Cristóbal is a stable, a horse pool and house designed for the Folke Egerstroms, who breed thoroughbreds there. Located in Los Clubes, the complex creates a quiet drama with water and color.

follow the land's natural contours. As little lava as possible was to be removed for carving out steps, walls and curving streets. No house was to be allowed to occupy more than ten percent of its large lot; each was to have an interior, walled garden and be simple and contemporary in design.

At El Pedregal, as in all his projects, Barragán employed the most elementary architectural elements: abstract, geometric forms, flat surfaces, carefully arranged planes. What he tried to achieve was a modern expression that transmits to people, he said, "the experience of centuries which may make their lives a bit more pleasurable. It is exactly what modern cities lack the most." Although his architecture eschews the baroque colonial aspects of Mexican design—which he regards as vulgar, secondhand imports—it is profoundly respectful of the country's indigenous ways of building and living. Mexicans traditionally live behind thick walls that bestow privacy and create interior gardens. And if there is a keystone to Barragán's architecture, it is his use of the wall.

As he once explained, "In certain European cities and in some towns of Mexico, when one walks between two walls on a street, to see the tree tops appearing behind these walls adds interest and more beauty. And all this because of a most important word in human life, and that is *magic*. Still another one: surprise. We have to have surprises as we walk on any street and as we arrive at any square." The walls, of course, also form enclosed gardens.

Walls surrounding El Pedregal's houses were to have been built of lava, splendidly colored, some in tones of rust, green, ocher, others in vivid reds, pinks, magentas, blues, violet. To add variety at the entrances to the subdivision, Barragán used tall iron pickets, gates, plazas and fountains. He let water run over wall tops and stones to hasten growth of moss and for the sound it makes. Water, with its ability to transform, reflect and create visual illusions, has special meaning for Barragán. As he said when accepting the Pritzker Prize this June, "While awake or when sleeping, the sweet memories of marvelous fountains have accompanied me through my life. I recall the fountains of my childhood; the drains for excess water of the dam; the dark ponds in the recess of abandoned orchards; the curbstone of shallow wells in the convent patios;

Andrea O. Dean is senior editor, articles, of the AIA Journal. *It is the official magazine of the American Institute of Architects.*

Mathias Goeritz collaborated on towers, soaring to 165 feet, at Ciudad Satellite north of Mexico City.

the small country springs, quivering mirrors of ancient giant water-loving trees. . . ."

Between 1958 and 1968, Barragán created two subdivisions outside Mexico City designed around the activities of horses. These projects, with their overscaled, spectral-looking fountains and walls of striking color, achieve a sense of drama, a quality usually neglected by contemporary architects.

First of the equestrian complexes was Las Arboledas (p. 154), where Barragán was again his own developer. It encompassed a riding academy and resembled a series of still photographs from a surrealist film. At its entrance is a red stucco wall, 100 yards long and purposely "bent at the center to emphasize its disappearance over the horizon," according to his biographer, Emilio Ambasz. Beyond and behind the wall is a long, narrow avenue flanked by eucalyptus trees. Along its center flows a shoulder-high, brimful watering trough, looking for all the world like a giant, mirrored ribbon. It stops before a bright blue wall that stands like a closed doorway. Next to it is another wall, white and three times longer. "There is something mad about the exaggerated dimensions, the startling walls at the end of the allée," says Arthur Drexler, director of architecture and design at the Museum of Modern Art in New York. As consultant to the Pritzker jury, he winnowed out the nominations, reducing them from about 100 to nine. "Horses," he observes, "can, of course, drink satisfactorily from a trough that is not quite the length of a football field. If you come on that in the middle of a woods, I think it would give you a jolt. But there it is and it's marvelous."

The equestrian project of San Cristóbal (pp. 154-155), done in collaboration with architect Andrés Casillas as a private residence and horse-breeding facility, resembles a heroically proportioned stage set. Serving as backdrops are bright pink, purple and rust-colored walls, twice the height of a horse. Cut into the high walls are openings scaled to the size of the animals. From troughs suspended above the walls, water streams into still pools.

San Cristóbal is a re-creation of Barragán's childhood memories. In describing to Ambasz the village of Mazamitla, near the prosperous ranch where he grew up, Barragán recalls how "the water distribution system consisted of great gutted logs, in the form of troughs, which ran on a support structure of tree forks, five meters high, above the roofs. This aqueduct crossed over the town, reaching the patios, where there were great stone fountains to receive the water. The patios housed the stables, with cows and chickens, all together. Outside, in the street, there were iron rings to tie the horses. The channeled logs, covered with moss, dripped water all over the town, of course. It gave this village the ambience of a fairy tale."

Emilio Ambasz has said that all Barragán's work is autobiographical; the architect readily agrees. "In my work," he says, "I have always striven to adapt to the needs of modern living the magic of those remote nostalgic years." Yet the particularities of this nostal-

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Corridor of chapel for Capuchin nuns is brightened by light filtering through yellow cement lattice.

gia remain something of a mystery, as does Barragán himself. He is charming, gentle, eminently personable, if in a remote, aristocratic way. While his art is infused with feeling, about his life we have only a few facts.

Like three of the masters of modern architecture—Frank Lloyd Wright, Miës van der Rohe and Le Corbusier—Barragán had no formal architectural training, but learned the profession through direct experience and writings about design.

From books came the lasting influence of Barragán's early adulthood. In 1924, he visited Mexico City for the first time and then journeyed to Europe. In France, he discovered the writings of Ferdinand Bac, a brilliant teacher, though somewhat pedestrian as a painter and landscape architect. Barragán says: "Bac was a dreamer, a poet. From him I learned that gardens can be bewitched, enchanted, and shelter the great sum of serenity at man's disposal."

During his 1924 trip to Europe, Barragán also visited the gardens of the Alhambra in Spain. Its "brilliantly composed spaces, fountains and water channels have had a lasting effect on his work," says Ambasz, as have Islam's compartmentalized, sequential and sensuous spaces. Another obvious influence was Surrealism, to which Barragán probably was first exposed through films, books and paintings that were circulated in Mexico in the 1920s. The Catholic faith and still, monastic spaces also have affected his work, which often has been called religious.

The International Style, which Barragán encountered during a second trip to Europe in 1931, also left a strong imprint on his work. As Drexler observes, "At a glance, Barragán's work appears to be little different from a great deal of European International Style design. But, only at first glance." He uses the same abstract treatment of wall and roof and ground planes that one connects with German functionalist architecture of the 1930s, which had the intention of being impersonal, generalized and very cool, very distant from one emotionally. Barragán's use of the same elements has exactly the opposite intention and effect—to create hypnotically compelling environments. He accomplishes this mainly by employing subtle, sometimes stunning colors and giving one or two elements exaggerated dimension and presence.

This singular gift lay dormant until the architect was well into middle age. In 1945, Barragán became his own developer and launched into the planning and

Barragán considers El Pedregal, a garden development in Mexico City, to be his most interesting creation.

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design of El Pedregal, where he found a design language of his own. (Sadly, success spoiled Barragán's concept; only a couple of dozen of its 900 houses and lots were developed according to his specifications.)

The subtleties and apparent paradoxes of that language are best seen in the modest, yet impeccably elegant house the architect built for himself in 1947 in the workingmen's Tacubaya neighborhood of Mexico City. The overall effect, as in all of Barragán's mature work, is of spaces that could be built anytime—he likes to use the word "atemporal" in describing his work—and anywhere.

He calls his house a 20th-century hacienda. The house brings to mind the expressionist tradition, yet hasn't a single gentling curve; all edges are hard. It seeks to create a sense of repose and its spaces are, therefore, static but never symmetrical. Symmetry, to Barragán, is boring. Though infused with a sense of poetry, his house is austere, a solitary man's hideaway. "Solitude," says Barragán, "is good company and my architecture is not for those who fear or shun it."

The house still serves him as both refuge and workplace. To the street it presents only a blank wall punctured by small openings and a large window high above the street. Inside, it is divided into three levels with a spacious, double-height living room, articulated by low partitions that allow space and diffused light to flow from room to room. Barragán's famous, surreal-looking stairway of cantilevered pine boards without railings seems to float upward to a door that is always closed. Near the stair is a simple, sturdy desk (right). An enormous window extends at one end of the living room from floor to ceiling, opening on an overgrown, walled garden framed by the window's cruciform mullions. This garden is the house's center and heart. In every room, Ambasz writes, "roughly plastered walls and volcanic rock floor tiles are contrasted with polished wood floors, velvety carpets and homespuns."

There has been criticism of Luis Barragán's selection as this year's Pritzker Prizewinner on grounds that his work, inward-looking, preoccupied with manipulation of forms, is not "socially relevant." Drexler responds, "I don't know what unsocial architecture could be. All architecture is social in that it communicates something, and Barragán's communicates to me with a wallop. Whenever someone is justified to me as a socially responsible architect, it is usually a prelude to explaining why his work is so second rate. Barragán will be remembered as a great landscape architect, and in these days of growing preoccupation with ecology and the environment, I find him politically rather more relevant than some of the people who would be most quick to criticize him." Philip Johnson says, very simply, "Some will call Barragán elitist. I'm sorry; he is a genius apart."

In Barragán's austere house, cantilevered pine stairway leads to a door that is always closed.

Barragán loves windows that reveal only sky. This one is above doorway leading to second floor.

Environmental activist Ron Babik:

"At our Cambria coal mines, we treat 7 billion gallons of acid mine water a year.

"Thanks to a unique Bethlehem process, we're not left with an ocean of muck."

"Treating all of that water so it meets Federal and state guidelines is no small accomplishment," says Ron Babik. "And neither is disposing of the slurry generated during the process.

The "slurry" problem

"Mine water in this part of the country is acidic because it picks up sulfur and iron as it percolates down through the ground and the coal seams. In order to mine the coal, the water must be pumped out and then treated before it can be discharged into a nearby stream.

"In most mine water treatment methods, lime is added to the water to neutralize the acid and help precipitate out the dissolved metals as solids.

"But most of those methods generate a slurry that's 99% water and only 1% solids. The slurry has to be pumped to large man-made ponds. But these ponds quickly fill up. Then another one has to be started. That wastes land. And when your land runs out, you're up against a serious solid waste disposal problem.

New coal mine waste water process developed by Bethlehem

"Bethlehem's research scientists developed a process that produces a higher-density slurry—a sludge—in which the solids can be concentrated up to 40 times more than with the conventional lime-treatment method. This reduces the volume of the waste material, saves land and cuts costs. As a matter of fact, at Cambria we're able to dispose of most of the sludge by pumping it back into sections of our mines that have been worked out."

Pollution solutions don't come easy—or cheap

A major problem we face is that we usually can't buy pollution control facilities and equipment off the shelf. They've got to be researched, developed, designed, fabricated, installed, and de-bugged on a case-by-case basis—as was the high-density waste water process we've described here.

And, of course, money is another problem. Bethlehem has already spent more than $700 million for pollution control equipment at our various operations. And we're committed to continue with programs that will control approximately 95 percent of our pollutant emissions and discharges. These programs should achieve primary air and water standards, the level of control established for a healthy environment.

From here on: Let's make sure the benefits are worth the costs

Bethlehem intends to keep on with the clean-up. But before new and tighter regulations are proposed, we believe Federal and state environmental authorities should be required to show that the *benefits* of those regulations will clearly be worth the *costs*.

Our position is clearly explained in our booklet, *Steelmaking and the Environment*, which includes our *Statement on Environmental Quality Control*. If you'd like a copy, write: Public Affairs Dept., 476 Martin Tower, Bethlehem Steel Corporation, Bethlehem, PA 18016.

Bethlehem

Ron Babik supervises the water treatment plants that service the mines at Bethlehem's Cambria Coal Mining Division near Johnstown, Pa. Ron is one of about a thousand Bethlehem Steel employees whose activities involve Bethlehem's environmental control program.

By Timothy Green

Ronnie Biggs is alive and well and living in Brazil

Maybe crime doesn't pay, but 17 years after Britain's Great Train Robbery, one member of the gang is doing very nicely, thank you

"This beats being in the slammer," says Biggs, chatting with Copacabana Palace poolside waiter.

Remember the opening scene from that fine Alec Guinness movie *The Lavender Hill Mob*? There is Guinness, immaculately turned out, holding court in a smart South American restaurant as an orchestra plays in the background. And he tells the tale of how he arranged a great gold robbery in London and nipped off with the proceeds to a life of luxury. The movie, of course, ends with a catch: Guinness is actually handcuffed under the tablecloth to the Scotland Yard detective who will shortly escort him back to retribution.

In real life the criminal's luck is sometimes better. For if you stop by the poolside restaurant of the Copacabana Palace Hotel in Rio de Janeiro on a balmy Saturday afternoon you may observe a tall, graying Englishman, casually dressed in an open-necked shirt, crisp white slacks and sandals, working his way through a steaming plate of *feijoada,* the popular Brazilian dish, and washing it down with copious drafts of cool beer from cans stored in an ice bucket beside him. The white-coated waiters hover attentively, and inquire "How is our little prince today?" as a cheerful little boy of six comes dashing back from the pool to announce he can swim a width without his water wings. Father congratulates son in colloquial Portuguese, and the boy leaps back into the water. "This beats being in the slammer," says the Englishman, reverting to a Cockney accent. "I'm celebrating two anniversaries—it's 15 years this summer since I escaped from the nick at Wandsworth, and it's ten years since I arrived in Brazil. That's the longest period in my adult life that I've been honest."

The man at ease on Copacabana is Ronald Biggs, one of the gang that held up the night mail train at Sears Crossing in Buckinghamshire just north of London on August 8, 1963, and escaped with £2,631,684 (then worth nearly $7,400,000). The saga of how this "Great Train Robber" ended up on the beach in Rio is somewhere between an Agatha Christie mystery and a Frederick Forsyth adventure yarn. And no one likes telling it better than Biggs himself.

The touch of pathos is that he doesn't actually have much else to do these days. For one of the strict conditions under which he is permitted to stay holed up in Brazil is that he cannot work. And the Brazilians only allowed him to stay, once Scotland Yard tracked him down there a few years ago, because he was about to become the father of a Brazilian child. Biggs' passport is his little son, Michael, capering about in the swimming pool. So he whiles away the days looking after Michael and reminiscing nostalgically with friends.

Reenacting crime in 1963, the author climbed Sears Crossing tower, where lights were rigged to stop train.

Timothy Green, a free-lance writer and lecturer who lives in London, interviewed Watership Down *author Richard Adams for* SMITHSONIAN, *July 1979.*

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"ESCAPE from the ordinary"

Engine driver Jack Mills was struck by robbers who forced him to move train.

He lives by his wits, helping visiting television crews or doing the odd favor for those who ask. "I have been lucky," he once told a *New York Times* reporter. "Somebody always seems to come by with a 500-buck proposition, and it keeps the boat floating."

My own curiosity was heightened because, some 17 years ago, I had covered the train robbery as a reporter for *Life*. (To please a photographer I had dressed up as a robber and climbed all over the place to "re-create" the robbery for him.) So, stopping by Rio, the chance to call upon a member of the gang that had pulled off one of the biggest "tickles" in history was irresistible.

Initially Biggs reacted to my approach with the built-in caution of a professional criminal who has spent almost a decade on the run. He agreed to meet me on the open terrace of my hotel at 8 o'clock one evening. Precisely at 8 an Englishman indeed showed up. "I'm not Ronnie," he offered by way of introduction, sitting down and accepting a drink. We chatted, and it turned out he was a former porter from Billingsgate fish market in London, who finds the waterfront life in Rio more agreeable than lugging fish. After a while, no doubt in response to some prearranged sign from this friend, Biggs padded up out of the night and sat down.

Reassured that I was not part of some new trap, Biggs relaxed. And he smiled like a happy schoolboy when I mentioned I had brought out with me some true English tea, several packets of his favorite custard powder and the London papers. "Now I can get up in the morning, make myself a nice cuppa and read the papers, just as if I was in England," he said. "You know what I miss about the old country? The taste of fresh Canterbury lamb with mint sauce, and the smell of whelks on a stall by the seaside. I remember them as a kid on the pier at Margate; my dad would give me half-a-crown to go and amuse myself while he was in the pub."

Trips to the sea were a treat, for he was born and bred in London. His birthday was auspicious. "I was born on the eighth of August 1929, exactly 34 years to the day before the train robbery," he explained, as we settled into a long evening of gossip. His father was a cook, usually working on railroad dining cars. His mother treated him as the baby of the family. "I was superprotected," he recalled. "My mother always made sure that my cap was square on my head and my socks were pulled up. It was a loving family life."

That was shattered when he was suddenly evacuated to Cornwall at the height of the London blitz. Ronnie lived with a fearsome village coalman, who reminded him of Basil Rathbone playing the stern Mr. Murdstone in the movie of Charles Dickens' *David Copperfield*. "Cor," said

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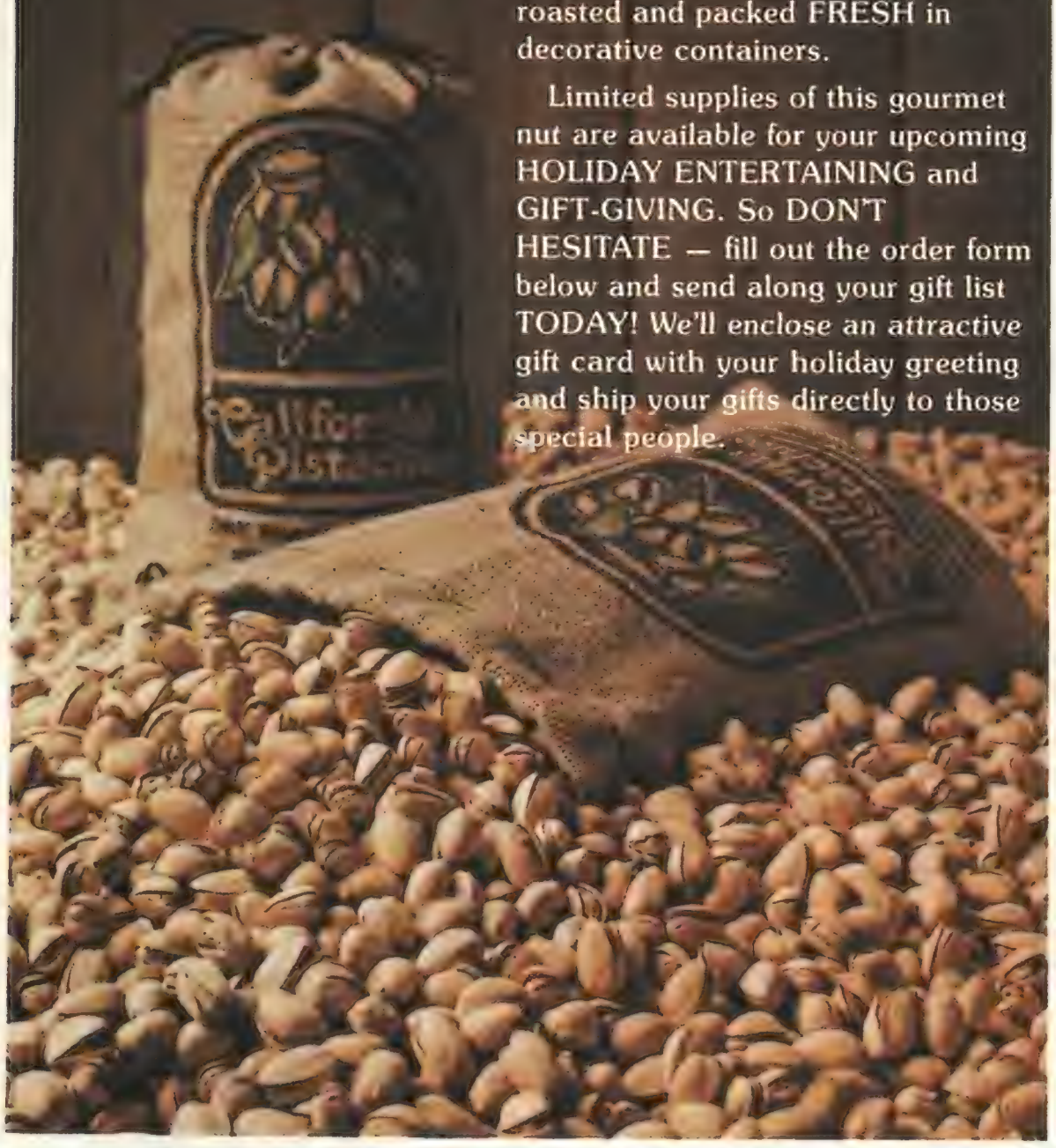

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Ronnie the first evening, "ain't he like Basil Rathbone?" The coalman was not amused and proceeded to treat Ronnie with Dickensian savagery. "If I was five minutes late for dinner it was a stick across the arse and up to bed," Biggs went on. Eventually he was packed off home. But he found it difficult to resettle either in school or in a builder's trade college to which he was sent. "I'm not saying I became a thief because I went to Cornwall, but. . . ." he said, leaving it open.

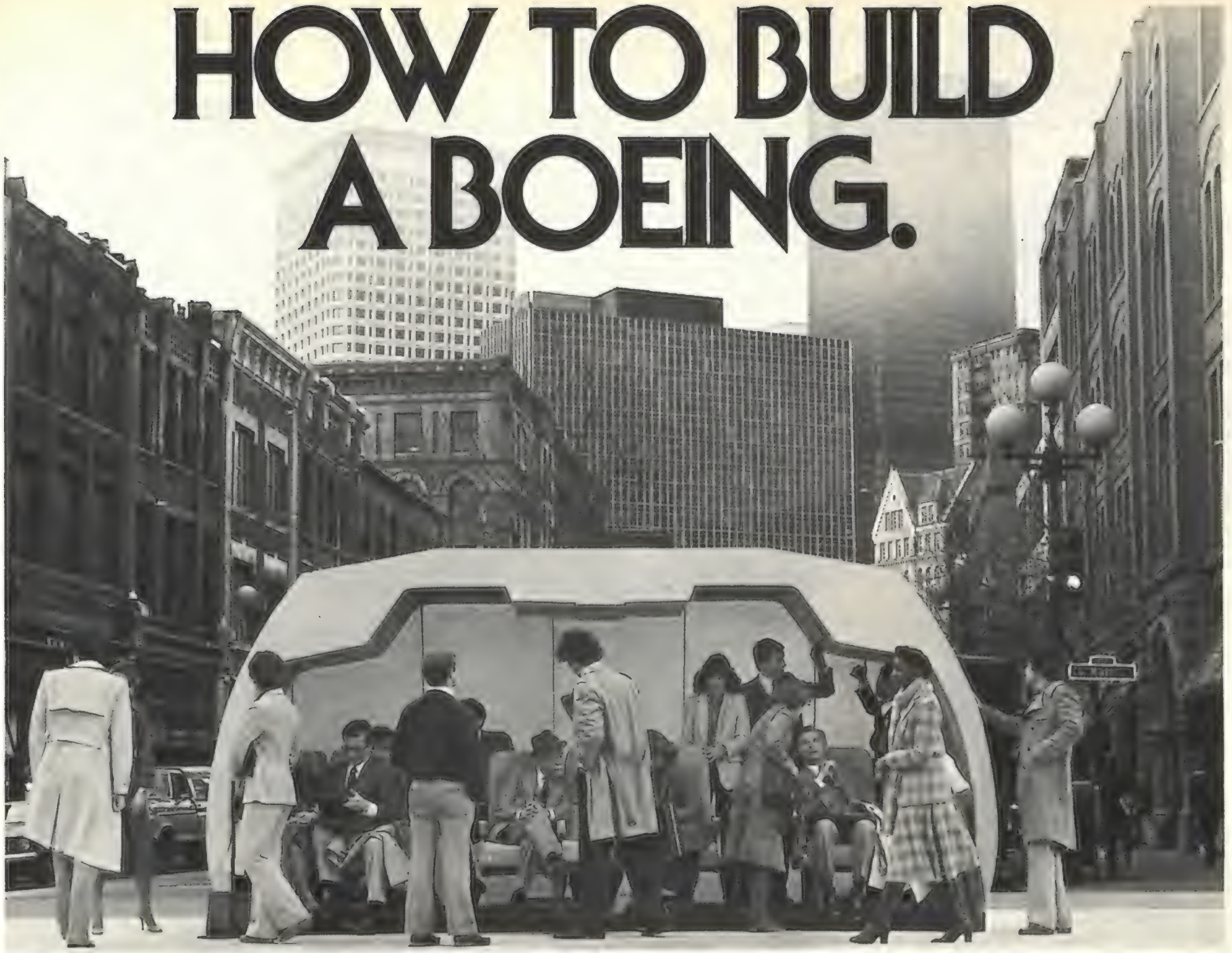
At least Cornwall sparked in him rebellion against authority and discipline. He said bluntly, "If someone is negative to you, you are negative to them."

He drifted from petty to serious crime, from probation to remand center to prison, and each experience became a more thorough lesson in the skills of the criminal. "I met a chap in one remand center who told me how easy it was to break into houses," he said. "Each time inside you learn more. So you begin with minicrimes, and move on to breaking shop windows, creeping [cat burglary] and then safes. I remember once on the moor [Dartmoor Prison] we had a bloke who was good with gelignite [dynamite], and you soon pick that up."

Prison is also a hub of intelligence. Doing time for the theft of a car, Biggs met up with a post-office sorter who told him about various trains that carried

Hot on trail, days after crime, Scotland Yard's Gerald McArthur closes in on gang.

HOW TO BUILD A BOEING.



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Interior of unguarded "high value" mail car which crooks forced with picks and crowbars, subduing handlers to take some 120 sacks of used bank notes.

large sums of money. He mentioned it to a fellow jailbird, Bruce Reynolds, and they talked of possible train robberies. "Everything is put together on the inside," explained Biggs. "You plan what to do when you get out." In the "nick," Biggs and Reynolds became good friends. Both liked to cut a tough, dashing image, modeled on Ernest Hemingway (and both named their sons Nick, after Hemingway's Nick Adams).

On their release they kept in touch. Bruce went back to organize various crimes with his old "firm" (gang), including a spectacular robbery at the London airport. Biggs for a while tried going straight. He set up his own small building business, and found plenty of work. The only trouble was that many of his customers were slow to pay up, and he was constantly short of ready cash. But one job was rewarding. An old railway driver, Stan, and his wife asked Ronnie to put new windows in their bungalow. They paid him regularly and treated him almost like a son.

Meanwhile, Bruce Reynolds and his firm had received some intelligence about the movement of large sums of money on the night mail trains from Scotland, as banks returned old notes to London. Casing the situation, they decided quickly that it was impossible to stage a holdup at the railway terminus; the only possibility was to stop the train en route. For that they needed at least two experts, one to fix the signals to stop the train, and another to drive it to a prearranged place for unloading. They had already found the signal fixer, who worked for another south London firm that specialized in robbing trains on the Brighton Line. The two firms had agreed to combine forces for the proposed train heist. But they still needed a driver. As Biggs tells it, Bruce and his wife Franny came by for a drink with Ronnie and his wife Charmian. They drank beer, listened to some jazz, and then, when the ladies were out in the garden, Reynolds "offered me the train robbery. He said my 'whack' would be £40,000 or more. I thought it over; £40,000 was a fortune then [about $112,000 in 1963], and I visualized setting up my building business with proper plant and ladders. I've a

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Marc Chagall's *Trapéziste à l'Oiseau*, original lithograph. Signed limited edition of 75.

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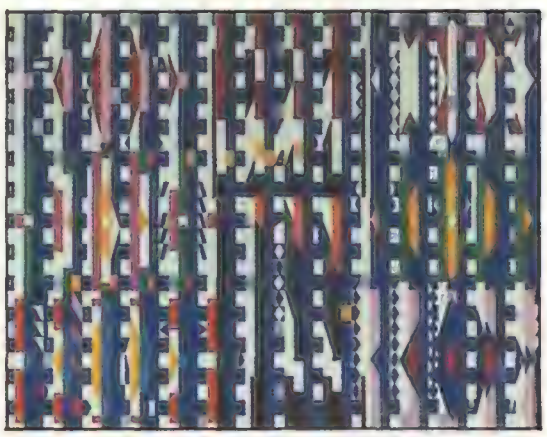

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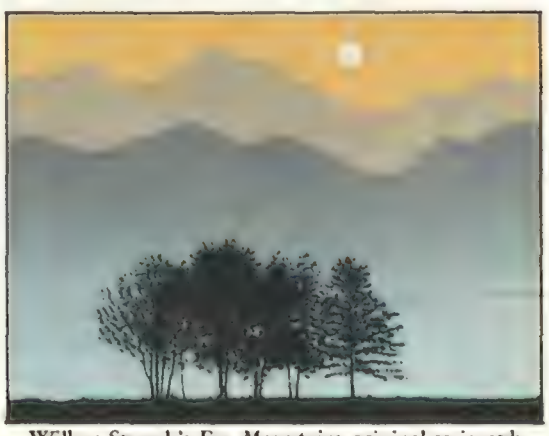

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gambler's nature and I'm optimistic, so I said yes."

"I can get you in under the old pal's act," Bruce told Biggs, "but what we really need is someone to drive the train."

"That's funny," said Biggs, "I'm working on a job for a train driver now."

He agreed to sound Stan out by bringing up the old man's pension worries.

"What would you do for £20,000?" Biggs asked.

"Anything, short of murder," said old Stan.

"Even rob a bank?" asked Ronnie.

"Yes, even a bank, if I could be of any use."

He was hooked. Biggs reported this to Reynolds, who proposed to the gang they take Ronnie Biggs in on a full whack of the haul, and the driver for a smaller "drink." Some of the gang were nervous about accepting Biggs, whom few knew personally. But on a show of hands (the way things about the robbery were agreed), there was only one dissenter. Biggs and Stan were in.

The robbery was scheduled for early August. Reynolds' firm had bought an old farmhouse, Leatherslade Farm, about 20 miles from the spot where they would

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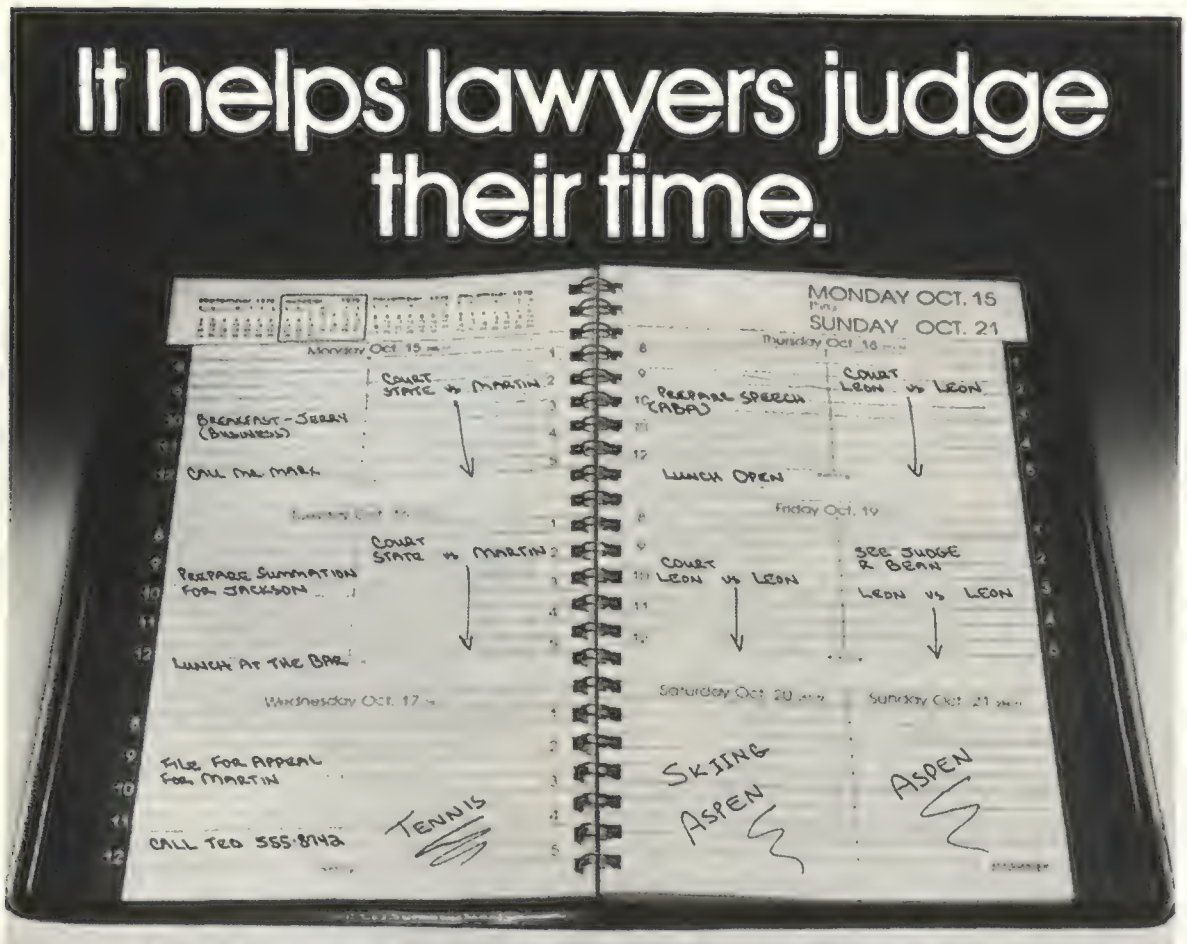

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At Leatherslade Farm, 20 miles away from crime scene, detectives found

stop the train. They planned to hide out there for several days while the hunt was on. Ronnie Biggs, cooking up an alibi to be "off the manor" (*i.e.*, the local police precinct), told his wife he was going on a tree-felling job in the west of England, and taking his friend Stan along "to make the tea."

Instead, they rode out to the farm in a Land-Rover with several of the gang. "Stan," Ronnie recalled, "still didn't really understand what was going on. On the way he admired the Land-Rover, and asked who owned it. 'We nicked it in the Strand yesterday,' we told him. 'Goodness,' said Stan, 'you could go to prison for a thing like that.' "

The Great Train Robbery was planned with military precision. The next night the gang set out from the farm in Land-Rovers and a truck painted like army vehicles, to use the cover that they were on a military exercise. The vehicles were parked by Bridego Bridge, where a country lane ran under the railway track. Everyone piled out and moved off up the line half a mile toward the nearest signal gantry at Sears Crossing, where the signal expert would stop the train. The robbers lay down in the dark by the track.

fingerprints galore, mailbags emptied by train robbers, but not any money.

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Quickly arrested, Ronnie Biggs got 30-year sentence, escaped in two years.

Biggs was set to keep an eye on old Stan.

Presently word crackled over a walkie-talkie that the train was coming. It pulled up precisely at the signal, and the fireman got down to investigate. The gang, leaping out of the dark, grabbed him and stormed aboard the diesel engine, coshing the driver, Jack Mills, on the head. Biggs and Stan then clambered up, while two robbers swiftly uncoupled the engine and the "high value" mail coach from the rest of the mail train.

Now came the test. Could Stan drive the train? He fumbled with the controls. The engine would not budge. The robbers cursed him, as Stan mumbled that he could not "get up the vacuum" to release the brakes. Their patience ran out. One huge raider, Gordon Goody, yanked Stan from the seat, while the others got the real driver, Jack Mills, and forced him to drive the train. Biggs himself, who had been cut in on the robbery because he could provide the essential driver, still argues that "Stan would have got up the vacuum, but Gordon was so tense he didn't give him a chance."

Instead, the battered Jack Mills piloted the train down to Bridego Bridge. There the robbers smashed their way into the mail coach, overcame token resistance from the sorters inside, and started unloading the mail bags. Ronnie Biggs and Stan were sent down into the lane. While

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H12

the other robbers formed a human chain, tossing bags down the bank and into the truck below, Biggs sat by as a spectator.

"It was beautiful," he said. "The mail train silhouetted on the bridge with the clouds scudding overhead, and the lads crawling like ants all over it. I realized then that I was seeing an earthshaking event." Not that he, or anyone else in the robbery, realized this was the turning point in their lives. Their coup in pulling off what was then the biggest cash theft in history meant that the hunt would be unrelenting, and the punishment tailored to fit the crime.

One hundred and twenty mail bags were swiftly stacked up in the truck. Then they were off, racing through the country lanes to the farm as dawn lit up the sky. "No one knew how much we had," says Biggs. "Reynolds had said there might be a million. My own worry when we got to the farm was how were we going to sort out the bread [money] from the letters? But when we cut open the first sack it was all bundles of notes. The only thing apart from money in all those sacks was a tartan bonnet."

They started counting, keeping an ear open to police radio frequencies and to news broadcasts. "When the radio said we'd got away with £100,000 we were already way past that," Biggs remembered cheerfully. "Soon everyone was called in to see a million quid. Charlie Wilson was doing the twist, singing 'I like it, I like it.'" The final tally was more than £2.6 million, mostly in used notes. When they had deducted "drinks" to be paid to Stan the driver, and to others who had helped, there remained more than £2.5 million to be shared equally in 17 whacks (15 for the train gang themselves, one for a corrupt law office clerk who had arranged purchase of the farm, and one for the man who had given the information about the money).

"One reason English crimes work so well," Biggs pointed out, "is that everyone has an equal whack, while in America some often get more than others. The English rule is no matter what you

Ingenious helpers rigged this van with hydraulic lift so that Biggs could "go over the wall" in 1965. His liberators were caught, but he made his way to Australia.

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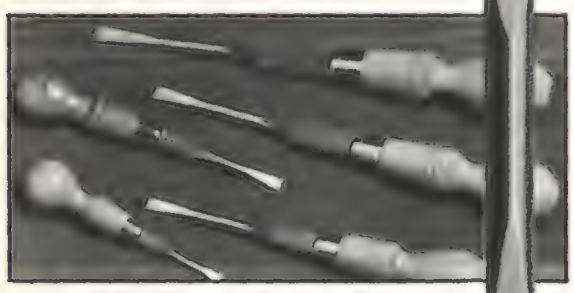

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get, it's equal shares, after the drinks. Each whack came to £137,000."

Thus far the Great Train Robbery had been executed with precision. "Stopping the train, uncoupling, moving to the bridge was all well planned," said Biggs, "but once we got to the farm with the money it all fell to pieces. It was everyone for himself. It was almost as if some of the best crooks decided to make mistakes on purpose."

The original idea to hide out at Leatherslade Farm for a few days was abandoned. The police quickly deduced the robbers were holed up not far away, and announced they would search all lonely property within a 30-mile radius. The tactic had the desired effect—it flushed the robbers out. They headed for home, or to lie low with friends (who, knowing what they had been up to, charged phenomenal "rent"). Biggs went home to find his wife and the police searching for him in timber camps in the west of England to inform him that his brother had died. Naturally they had been unable to find him, and it also blew his alibi.

Fingerprints on the catsup bottle

The crunch, however, came when the police found Leatherslade Farm. The train robbers had agreed to wear gloves all the time at the farm, but several had been careless because they knew someone was being paid to "clean up" afterward. Unfortunately, in the furor aroused by the raid, the "cleaner" never showed up. The police found fingerprints everywhere. Ronnie Biggs' were on a plate, a catsup bottle and a Monopoly set. He was arrested in September. The net gradually closed in on the rest. Surprisingly, the police never got a clue to the old driver Stan, whom Biggs had recruited, nor to the man who had originally provided the inside information about the money. The bulk of the money, which Biggs and the others had hidden or cached with friends, was never recovered. When it came to the trials, the sentences, by English standards, were stiff. Most of the robbers, including Biggs, got 30 years.

Yet as the prison doors closed, the legend of the Great Train Robbery was still growing. Two of the leading raiders, Bruce Reynolds and Buster Edwards, eluded the police for years, living it up in Mexico. And it was only when the

Hideout of train robbers, Leatherslade Farm became a tourist attraction.

cash finally ran out that they came home, Buster to give himself up, Bruce to be caught. The head of Scotland Yard's Flying Squad, Tommy Butler, waged a personal vendetta against the train gang almost to the moment of his own death.

The aggravation came not just from those still on the run, but from the robbers already in jail. The first over the wall was Charlie Wilson, who was abducted from prison one night by other criminals eager to get a slice of the money. Security on the others was instantly tightened. Ronnie Biggs at Wandsworth prison in London had to sleep with his cell light on at night, and a guard outside the door. He complained to the governor. "I told him flat," said Biggs, 'your extra security measures will make me do everything to get over the wall.' He said his orders were to keep me there."

So Biggs set up an escape plan with a fellow prisoner, Paul Seabourne, who was due for release. As soon as he was out, Seabourne and some friends got an old furniture van, cut a hole in the roof, and mounted inside a telescopic platform that could be raised to the height of the prison walls. On a summer afternoon in 1965, when Biggs was exercising in the prison yard, they pulled up outside, got on the wall, held the guards at

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bay with shotguns and then threw a ladder down to Biggs. "The old adrenalin was going," recalled Biggs, "and when I got to the top of the wall there was Paul saying 'Hello, you ugly fellow,' just as if he was meeting me in the high street. I was in such a flap when I got out of the furniture van that I started running the wrong way to the getaway car, and he had to call me back."

Biggs recalls paying £5,000 for his escape, although Seabourne originally offerred to do it for the prestige. "I think the gang who got me out would have done it for the glory," Biggs says confidently. The cash made sure. After hiding out in London for a while, he paid another £40,000 to what he calls "the organization" to get him across to France for plastic surgery (a complete facelift) and then on to Australia.

He lived first in Adelaide and later in Melbourne. His wife Charmian (since divorced) and his children came out to join him by a devious route, and the family settled into Australian life. Ronnie took various jobs, from running a hotel to plying his trade as a carpenter. He needed the money. Although he had got away not only with his own whack, but Stan the driver's, too (which he had offered to hold until the heat had died down), the money somehow, it seemed, just melted away.

Sitting with Biggs on Copabanca beach, we made a rough tally of what had happened to the boodle. "First off," he said, "I made several presents to other criminals down on their luck. Although I'm accused of being a villain, I've always believed if you make a good gesture you get good in return. So I gave £20,000 to friends, including one chap who'd had an accident and couldn't work, so I set him up in a tobacconist's shop." Stan's share was "invested" in various enterprises like betting shops. Biggs burned £750 in notes that were marked. His wife bought about £20,000 worth of jewelry; another £20,000 went on his defense (one of the ironies of the train robbery being that the defense lawyers at the long trial were paid with the stolen money). His escape from Wandsworth and the flight to Australia cost £45,000, with another £7,000 for his family's documents, said Biggs. The remaining £20,000 or so was dissipated by "minders" who looked after his share in return for a generous cut.

The supply of money was about gone, but the story stayed alive, as other robbers were hunted down or their wives sold their memoirs. Each time, Biggs' picture was printed in newspapers and flashed on TV screens. Ultimately, someone in Australia tipped off the police. Yet Biggs was still ahead of the game; he knew the time had come to move on. He slipped out of the house early one morning, just an hour or two before the police showed up. A friend smuggled him out of Australia on a boat to Panama, and then he made his way to Rio. He turned up alone, broke and not speaking a word of Portuguese early in 1970. "I remember the first day," he said. "I was dying for a beer and didn't know a word of Portuguese, so I was just pointing to one on the counter."

A decade later, that is hard to believe. He appears entirely at home, and his self-taught Portuguese is fluent. "I've forgotten a lot of English words," he said. "You really get out of touch. I can put my tongue readily to the word in Portuguese, but not to the English."

Although he adjusted rapidly to Rio, he was not content. His wife, closely watched by the Australian police, could not join him. Then his eldest son Nick was killed in a car crash. After three years he was ready to return to England and give himself up, hoping that voluntary surrender might win him maximum remission. So he arranged for a friend going to London to sound out whether a newspaper would buy his story of life on the run to provide money for his family while he was inside. The *Daily Express* took the offer, and sent a team rushing

In 1979, after serving time, three of gang posed for publicity picture before tour plugging book on the crime. Railwaymen protested, so the trio traveled by auto.

Retouched mug shots of Biggs were used in ad; model never claimed his fee.

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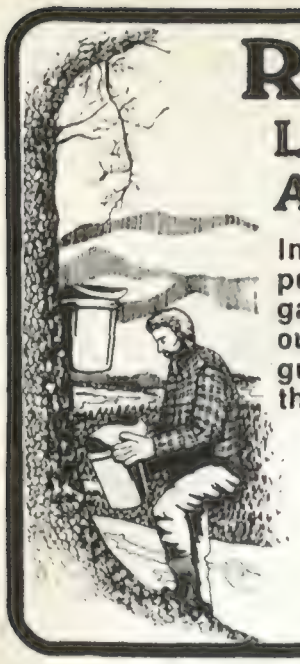

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Raimunda de Castro, who bore Michael, Biggs' son, no longer lives in Brazil.

to Rio. But someone else on the paper also tipped off Scotland Yard.

As Biggs settled down the first morning with the *Express* men to spin his yarn, in walked Detective Chief Superintendent Jack Slipper of Scotland Yard's Flying Squad, accompanied by Brazilian police. Biggs was devastated. "It was very important for me to give myself up. I was determined not to go back in handcuffs."

His desire to return voluntarily to England gave way to equal resolution to stay in Brazil. He was put in a Rio jail, pending extradition, and there he got his first glimmer of hope. He explained his predicament to a local taxi driver who shared his cell. The taxi man promptly asked if he had any children in Brazil. No, Biggs said, but his girl friend, Raimunda, thought she was pregnant.

That was it; the father of a Brazilian child could not be deported. Raimunda herself knew that, and next morning was bursting into the office of the chief of police claiming that she would shortly have Biggs' child. The loophole had been found. A disconsolate Slipper returned alone to London, to considerable amusement in the English press at such a slip-up. Biggs was soon released, on condition that he did not work, stayed in the state of Rio de Janeiro and reported twice a week to the police. Shortly afterward his son Michael was born.

Thus for the last six years Ronnie Biggs has pursued the expatriate life in Rio. He argues that his time in Brazil

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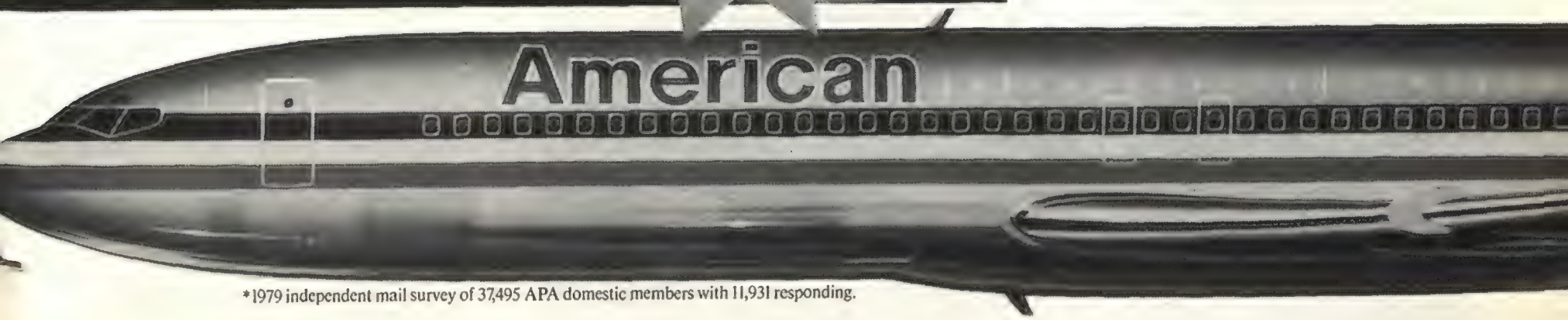

*1979 independent mail survey of 37,495 APA domestic members with 11,931 responding.

has reformed him. Life on the beach has done what prison could never do. "To claim that anyone comes out of Her Majesty's nick rehabilitated is ludicrous," he said, as we took dinner in his favorite seafood restaurant one evening. "I had to travel round the world to sort out my values. My travels really were a suspended sentence, while I learned what does and does not matter." Not that the punishment for crime should be a season ticket to sandy shores. But Biggs constantly pleads that the root of his and many other criminals' wrongdoing is the treatment of first offenders. "You've got to start with homes for first offenders," he stated firmly, "where they are put in a friendly environment and are not constantly reminded they are there because they stole something. The present system cannot work, but if boys could become part of a family in a first offender's home, then you'd have a lot less people in jail."

He had some jittery moments last summer when a change in Brazilian law was first interpreted as jeopardizing his immunity from expulsion. But it turned out the target was illegal residents, not him.

Biggs himself is resigned to the fact that he may never be able to return to England, and must spend the rest of his days in Brazil. "I've made a different life—I've had to," he said. "It's no use having other illusions." The Brazilians are also showing a more relaxed attitude toward his presence. He reports to the police only once a week (something the cops look forward to, as he is helping several of them learn some English). Ultimately he hopes he may also be granted permission to work. If that is forthcoming, his plan is to open an English pub in Rio, called *The Carpenter's Arms,* to acknowledge his former (legitimate) trade. There he would serve English beer and sausages, set up a darts team and offer a platform for touring English vocal groups, a kind of home away from home.

Relaxed on the beach at Rio de Janeiro, father Ronnie and son Michael look tanned, fit and healthy, unworried by Dad's part in Great Train Robbery.

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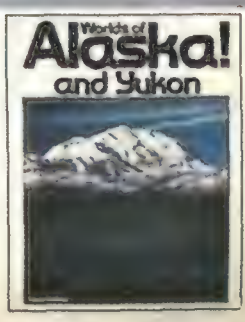

A bubble the size of a grapefruit bursts in Fountain Paint Pot. The color of the mud derives from trace elements, while consistency varies with the season.

Photographs by Douglas Faulkner

You wouldn't beat your feet on this Yellowstone mud

When the rainwater hits hot rock, result is a bubbling cauldron that lacks only eye of newt and toe of frog

In the wonderland that is Yellowstone National Park, tourists first want to see the geysers, especially Old Faithful, the most famous geophysical phenomenon in the country. But the steam that sometimes forms geysers may perform other tricks as well, as the pictures on these pages illustrate.

These are no wonders of the microscope, but bubbles in mud, a dream scene (or nightmare) of unlimited fudge boiling, known simply as a mud pot. Hot water coming up from below turns clay into mud, and the steam rises through the viscous mess to create bubbles that sometimes shatter with enough force to spatter spectators behind the guardrail.

The water itself, whether liquid or steam, is not "new" water, being vented to the Earth's surface for the first time. Some 95 to 99 percent of it is precipitation, rain or melted snow that penetrated down through gravel and cracked rock until it reached a zone of intense heat and either flashed into steam where there was room or became superheated where there was not.

The heat comes from a sheetlike mass of hot magma that has worked its way to within several miles of the surface. The magma could reach the surface and erupt, but no one knows whether it will or, if so, when. In the meantime the mud will continue to put on an everchanging show (see following pages), like a Jacuzzi designed by Hecate.

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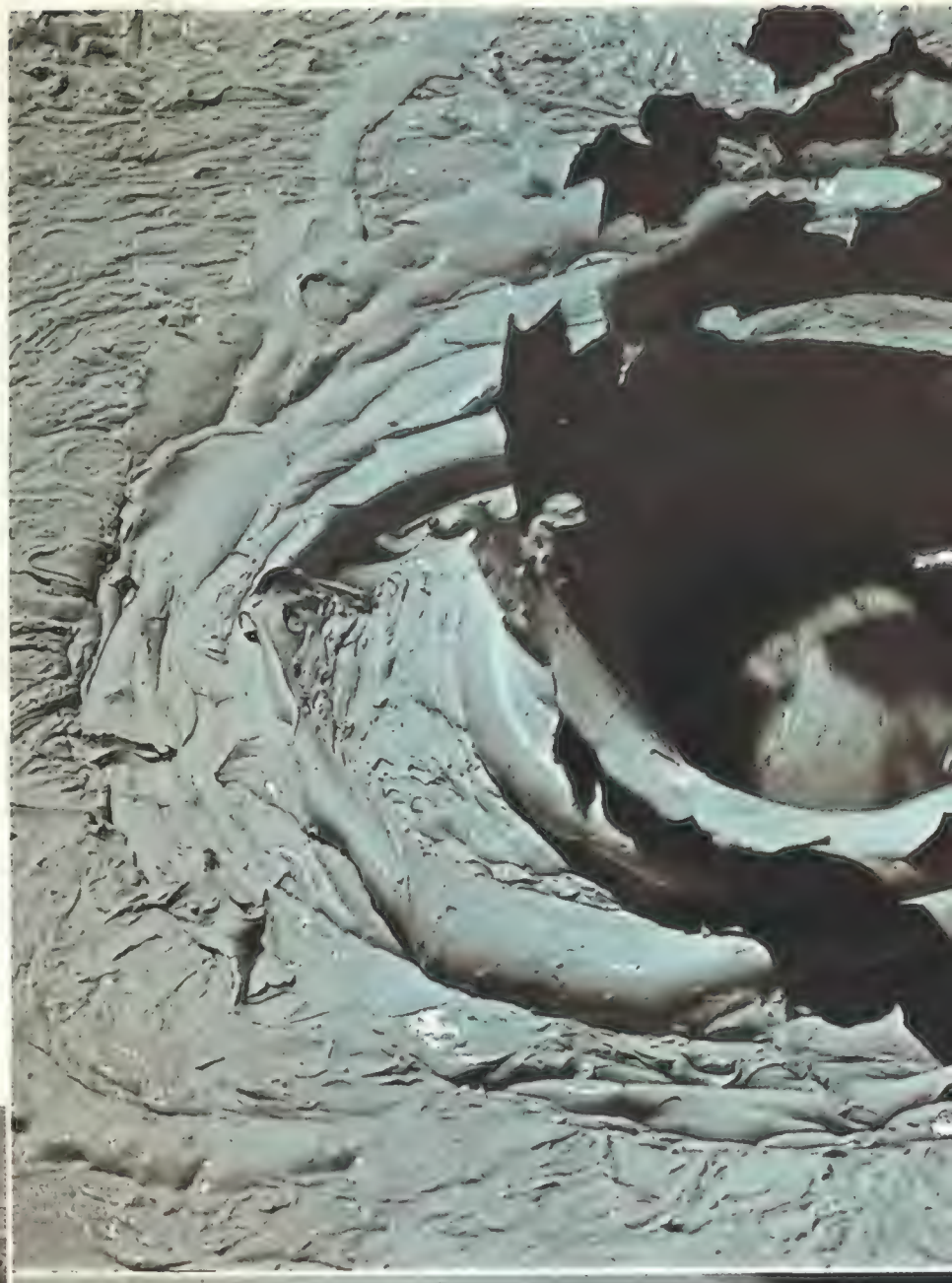
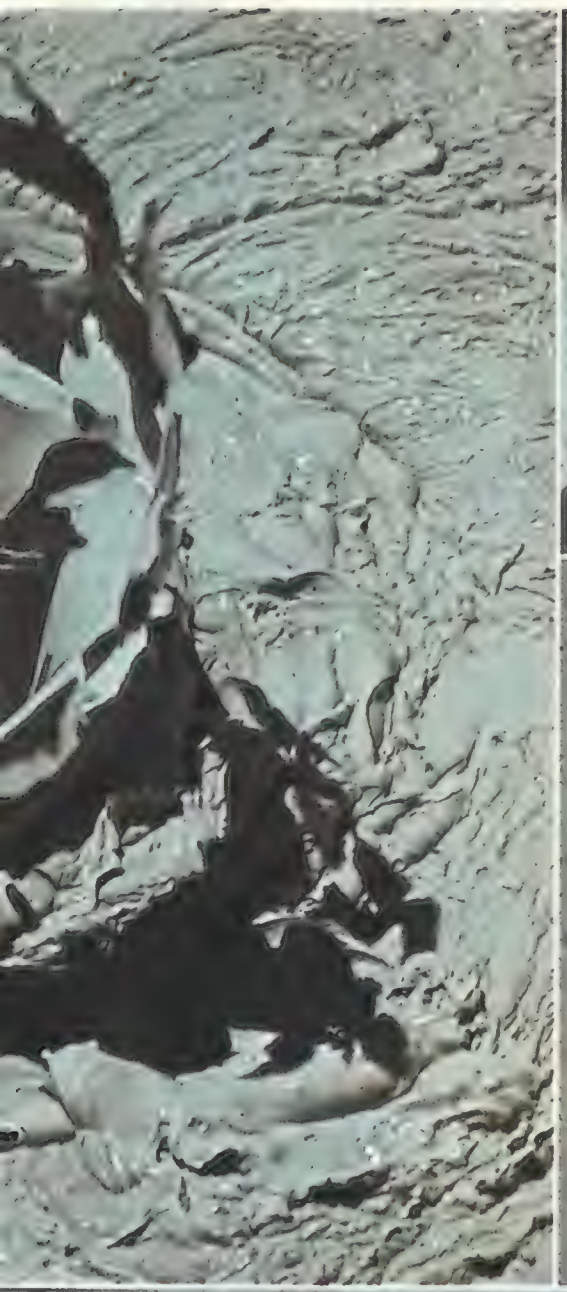
This overall view of the Fountain Paint Pot (above) shows any number of bubbles coming and going; steam, like that rising in the background, is the driving force for all the activity. As you look at the bubbles that plop and gurgle on these pages, try to sense the motions and rhythms of the mud and imagine the music Walt Disney might have chosen if he had filmed them.





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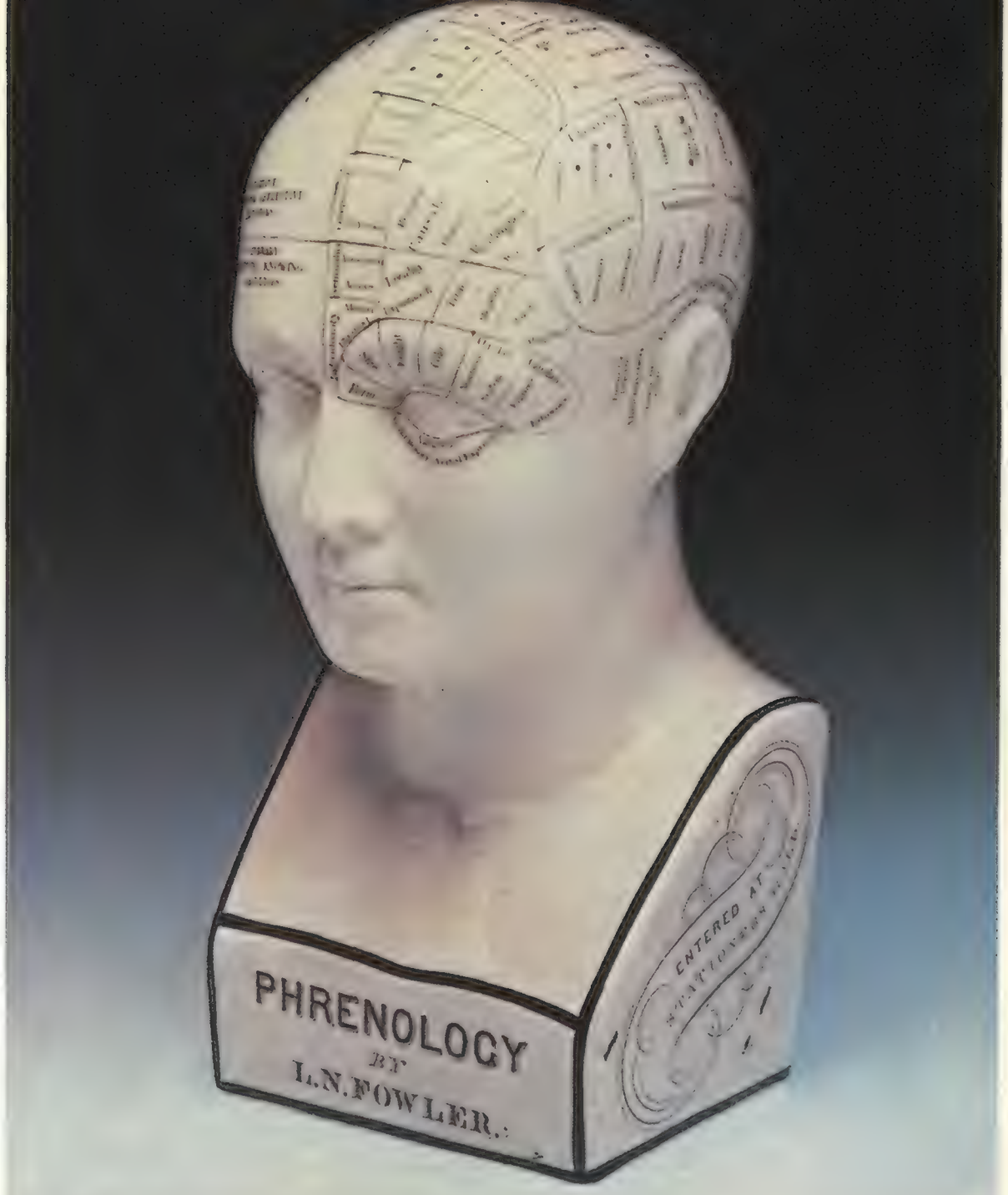
By Marion Mainwaring

'Phys/phren'—why not to take each other at face value

For centuries, people have tried using facial features and cranial bumps as a guide to character; some keep trying



Location of "organs" of the brain are marked on 19th-century representational model of a cranium used in teaching aspiring phrenologists how to read heads.

What, really, is a face? Perhaps nothing more than the irregular surface we see at the front of the head, shaped—from forehead to chin, ear to ear, for better or worse—by the whim of ancestral genes.

But the *power* that lies in a face—formidable! "Beauty" has been a force in international politics: "Had Cleopatra's nose been shorter," observed the 17th-century philosopher, Blaise Pascal, "the whole face of the world would have been changed." According to the English dramatist Christopher Marlowe, Helen of Troy's face "launch'd a thousand ships." "Ugliness" too can be a force—for misery. Edmond Rostand portrayed the brilliant, heroic Cyrano de Bergerac handicapped by a monstrous nose that makes him a figure of ridicule. With bravado, Cyrano declares that he is *proud* of his "appendage": a big nose "is the unfailing sign of a good man and kindly, generous, courteous, full of courage and of wit."

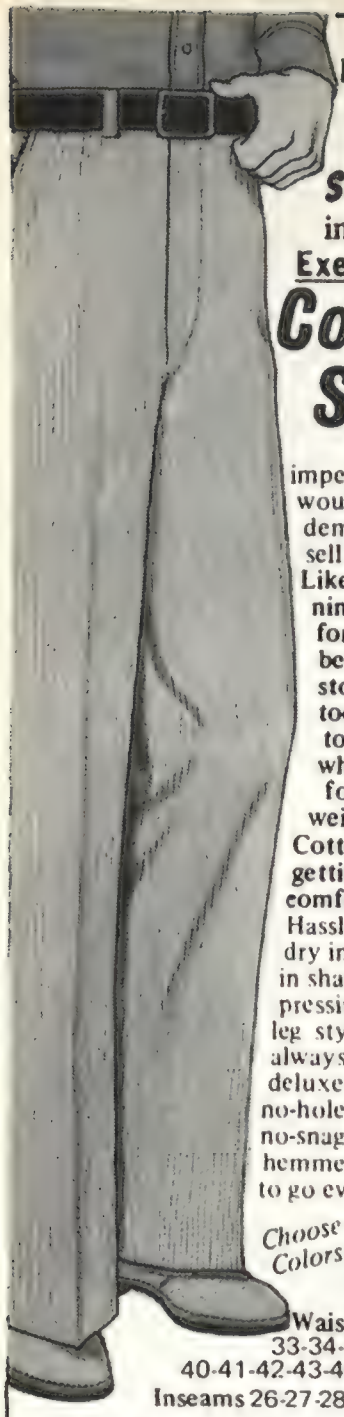
Although today's thinking has it that what goes on in the brain behind the face does not depend on the face's dimensions or the arrangement of its component parts, throughout the ages there have been people who believed—who still believe—that the face is an index of character to those specialists who can read it: the physiognomists who see—like Cyrano—noses, ears, eyes literally as "signs."

In the 19th century many educated Europeans and Americans accepted the scientific validity not only of face reading (physiognomy) but of head reading (phrenology) as well. The bumps on a person's cranium (p. 194), they thought, revealed his or her personality. So did the shape of the mouth, the tilt of the nose. The internationally popular pseudosciences of physiognomy and phrenology eventually blended, producing a fad for what might be called "phys/phren." Surprising today is the fact that "phys/phren" is still with us in the twilight of the 20th century.

Physiognomists of the 1800s were followers of Johann Caspar Lavater (p. 199) of Zurich. Born in 1741, son of a Swiss physician, Lavater was an artist, teacher, poet and evangelical pastor. He developed his system of face reading after drawing countless pictures of people he met and observing the behavior of friends and parishioners. Between 1775 and 1778 he published in German four volumes of what was to become an international best seller: *Physiognomical Fragments, for the Promotion of the Knowledge and the Love of Mankind.* The modern age of "psychological typecasting" had dawned.

In ancient times, Greek and Roman scholars wrote about how a person's character could be "read" in his facial features. Pythagoras, considered by some to be the founder of the "science" of physiognomy, is said to have selected for his sixth-century B.C. mathematics classes only those students who "looked" as if they could learn. Aristotle held that "large and outstanding ears indicate a tendency to irrelevant talk or chattering." Another writer stated flatly that "dispositions follow bodily characteristics."

For Lavater, the relation between face and personality was equally direct and absolute; every feature revealed the character. He urged his readers to analyze each feature and to draw it. Use little



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Early 1800s phrenologist is alarmed by his client's cranial bumps in this satirical cartoon which mocks pseudoscience. His plaster heads are much easier to read.

cards, he advised, "and always repeat the same design twice upon each card. . . ."

Eye, mouth, nose, chin—each had its meaning; so did the ear, "as well as, perhaps more than, the other parts of the human body." Lavater instructed his readers to examine the ear "in a brave man, and in a coward; in a Philosopher, and a changeling-born, and you will soon perceive distinctive differences. . . . In [the ears on page 200] I do not perceive one single form which I could suspect of stupidity . . . and that which is in the centre, most probably, supposes a sage and luminous mind."

Lavater's huge volumes were illustrated with hundreds of profiles, based mainly on classical busts, works of the great masters and portraits of contemporaries such as Benjamin West. He meshed his system into the ancient classification of the four "humors" or temperaments—choleric, sanguine, phlegmatic and melancholic (p. 202)—which also may have originated with Aristotle. According to Elizabeth C. Evans in *Physiognomics in the Ancient World,* Aristotle first proposed that "the body contains four humors and that the presence of good health or disease depends on the way they are mixed." The humors were thought to correspond to the four basic "elements" of the universe: fire, air, water and earth.

The founder of phrenology—the other half of "phys/phren"—was Franz Joseph Gall (p. 198), a German physician whose lectures on the subject were prohibited in 1802 by Austrian authorities as being irreligious. Gall, who is still regarded as a great neuroanatomist, deviated into a "cranioscopic" theory that human character is determined and behavior regulated by specific organs in the brain which protrude as bumps on the skull and can therefore be measured.

Gall found 27 such organs represented by corresponding bumps (the number later rose to 42). Studying convicted thieves and "singular cases of ladies who longed to steal and whose desire it was absolutely necessary to gratify" (the word "kleptomania" was not yet popular), he found large development of an organ that became associated with theft or cupidity. The cerebellum—modern science relates it to body balance and coordination—was for Gall the organ of sexual love, "amativeness." Later separated from amativeness were the organs of conjugality (married love) and philoprogenitiveness (parental love).

One day, examining a cast of a woman's head, Gall found two great "prominences" near the parental-love organ. He had never seen these before. He considered them to be a cerebral organ, but what were their functions? He talked with the woman and with people who knew her; she seemed remarkable for her strong attachments to friends. Hypothesizing that the unidentified organ was related to friendship, Gall easily found

The Boston-based author edited Ivan Turgenev's The Portrait Game *and has also translated his* Three Novellas.

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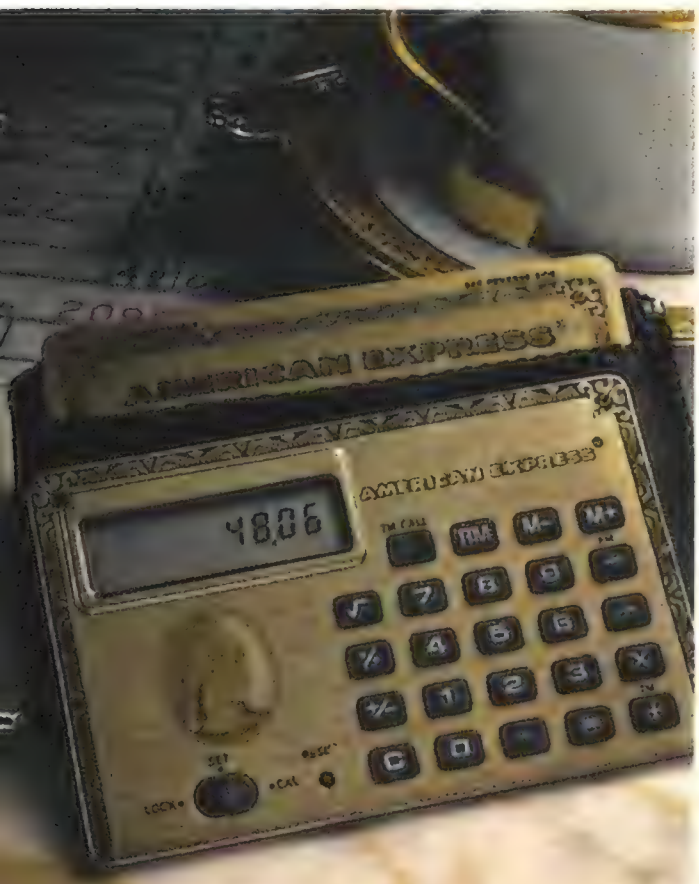

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Suicidal Cleopatra applies a fatal asp; would different nose have saved her?

other friendly persons with the same well-developed organ. He similarly localized and subdivided intellectual abilities.

Seeking a more receptive climate for his phrenological theories, Gall took refuge in Paris, where many people, including the writer Louis Viardot, had their heads palped by him. Gall found that Viardot had both the "bump of murder" and the "bump of moral sense . . . the bump no animal shares with man." Viardot later recalled that Gall, with his "marvelous power," divined the result of the obvious conflict between the forces represented by the two bumps: "I am sure," Gall told the young man, "that you are a sportsman!" As it happened, Viardot was a passionate hunter but had always felt guilty about his enjoyment of the kill. He was much relieved by Gall's explanation that his love of hunting represented "a horrible propensity transformed by the fairest of human qualities . . . a victory of soul over beast."

Phrenological purists criticized the physiognomists for reading character in "the hard parts of the face, which do not owe their forms to the state of the brain." No ears to indicate a "sage and luminous mind" for them! But in practice, as pointed out by Isidore Bourdon of the French Academy of Medicine in his 1842 *La Physiognomonie et la Phrénologie,* Lavaterians and Gallists in fact encroached on each other's territory.

Helen of Troy possessed colossal power in her face, which "launch'd" 1,000 ships.

Thus was "phys/phren" born. It had an enormous vogue: Lavater was eventually published in 150 editions and translations; scholars culled Greek, Latin and Arabic texts for the earliest references to the "science." In the 1840s, reading of people's character in their faces was such a popular activity that *Physionomiste des Dames* appeared—a guide for specialists in female faces. In ladies, black eyes meant strong-mindedness; blue eyes, languor; pale blue eyes, sensitivity with a speck of jealousy. Similar criteria were applied to historical figures. Napoleon was said to have possessed all but one of the features "found in a face almost superhuman" (p. 204). Parisian readers of the serialized *Three Musketeers* in 1844 did not boggle at being told that D'Artagnan's high cheekbones were a "sign of astuteness." By that time everyone could do his own face reading. There were even pocket manuals to consult as one sat in a café examining passersby, excluding those who (as happened) wore masks in self-defense.

In England, young Charles Darwin was nearly blackballed from the *Beagle* expedition because the ship's captain, an ardent Lavaterian, "doubted," according to Darwin, "whether anyone with my nose could possess sufficient energy and determination for the voyage."

"Phys/phren" had long since crossed the Atlantic. In 1823 a student at Har-

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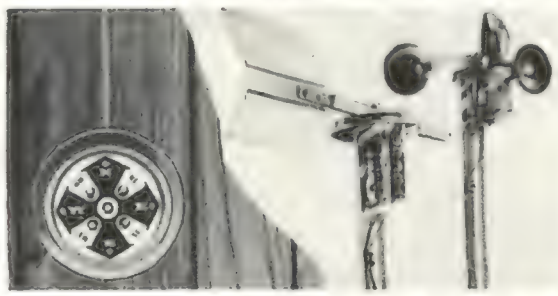

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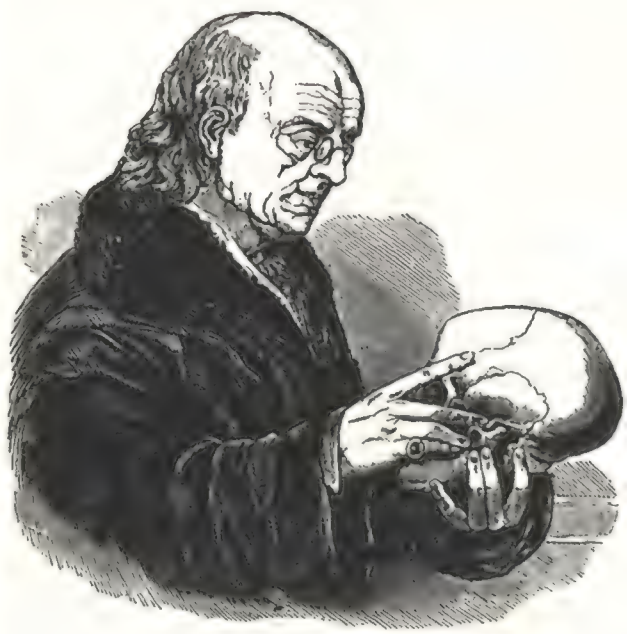
vard's medical school listed works by Lavater and Gall as "Important Books." Since incoming classes were still being taught that "individuals may be ranked according to the four humours," it is understandable that Gall seemed to represent a major scientific breakthrough. In 1832, when Gall's collaborator Johann Spurzheim died in Boston at the start of a U.S. lecture tour, he was given a hero's public funeral and a monument (John James Audubon sketched his body as it lay in state).

The phrenological societies and magazines that Spurzheim had inspired received fresh impetus from the long tour—1838-40—of his pupil George Combe, a Scottish lawyer. Combe inspected American hospitals, prisons, insane asylums, schools and science museums. He analyzed heads from President Martin Van Buren and Daniel Webster on down—not necessarily touching the craniums.

In Washington, D.C., at a party, Combe met—but did not manage a conversation with—John Quincy Adams, then chairman of the Smithsonian Bequest Committee and struggling to keep James Smithson's legacy from being "filtered to nothing, and wasted upon hungry and worthless political jackals." Combe admired the old man and was deeply hurt to read a published letter in which Adams classed phrenology with alchemy, astrology and augury, adding, "As Cicero says that he wonders how two Roman Augurs could ever look each other in the face without laughing, I have felt something of the same surprise



Phrenologist F. J. Gall had well-developed brain organs of "firmness, self-esteem."

Lavater, father of modern physiognomy, showed, by his rules, "insight, force."

that two learned Phrenologists can meet without the same temptation." But, Combe reasoned, Adams knew the "science" only through its enemies and, after all, Adams' head showed him to be "a man of impulse rather than of clear, sound, and consistent judgment."

Like Adams, Oliver Wendell Holmes (who was, among other things, professor of anatomy at Harvard) clearly saw phrenology as a pseudoscience consisting of "*a nomenclature,* with a self-adjusting arrangement, by which all positive evidence, or such as favors its doctrines, is admitted, and all negative evidence, or such as tells against it, is excluded." Yet such men as the educator Horace Mann and Samuel Gridley Howe, pioneer worker with the physically and mentally handicapped, held Combe to be "one of the first intelligences of the age." Dr. Howe, his wife Julia Ward Howe later recalled, made an applicant for domestic service in his household take off her bonnet so that he could judge her suitability.

Americans in general seized upon the practical implications of phrenology. If trainmen were to be recruited solely on the basis of the new "science," Horace Greeley argued, the railway accident rate would decrease. Young people were exhorted to consider phrenological compatibility in choosing a mate. "Should We Marry? Are We Well Mated?" asked a contemporary advertisement. "The most important question . . . should be in regard

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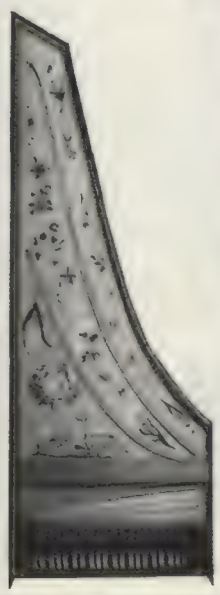

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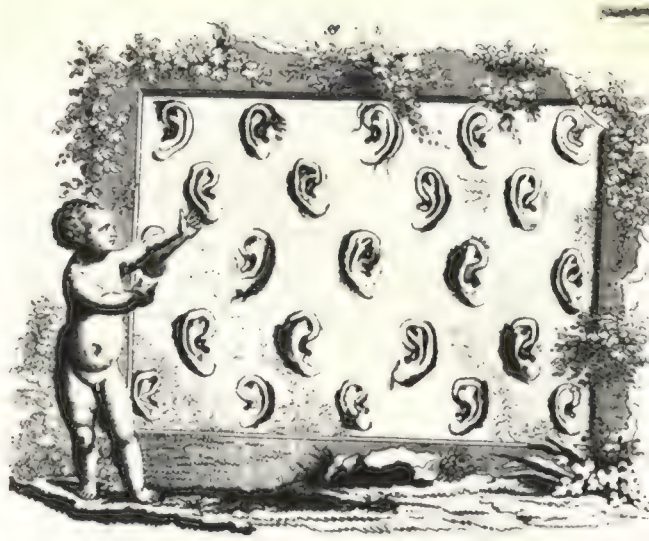

For Lavater, ears "perhaps" gave best visible guide to each person's character.

to mutual adaptation, physically, mentally and morally," stated the fine print, adding dogmatically: "Phrenology explains this, and therefore should be consulted." (Perhaps the Federal Aviation Administration psychologist who develops "behavioral profiles" for the 1980s to help airport personnel single out hijackers from law-abiding passengers should have on his reference shelf the 1890s publication, *How to Study Strangers by Temperament, Face and Head.*)

Phrenologists tended to support far-out causes: health reform, women's rights, sex education. One was Lydia Folger Fowler, America's second woman doctor—an enthusiast, as were her husband Lorenzo and her brother-in-law Orson Fowler. By 1844, the Fowlers had joined forces with Samuel R. Wells in operating Fowlers & Wells, a profitable phrenological business in Manhattan with head-reading services, a museum, a training program for aspiring phrenologists (p. 193), a publications department and a lecture bureau. Still going strong in 1887, their *Phrenological Journal* in its November issue carried a character analysis, complete with engraved likeness, of Spencer F. Baird, the Smithsonian Institution's second Secretary (p. 206). "From the portrait," the editors wrote, "we infer that Prof. Baird possessed a very large and active brain; the faculties relating to observation were particularly large. . . . The breadth of his head indicates that he was a thorough worker and also keenly alive to esthetic impressions. . . ."

At establishments like Fowlers & Wells, city people could have their heads read for from one to three dollars. But the fad reached far beyond the cities (p. 208).

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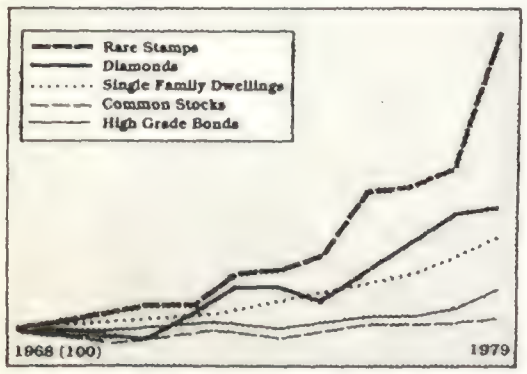

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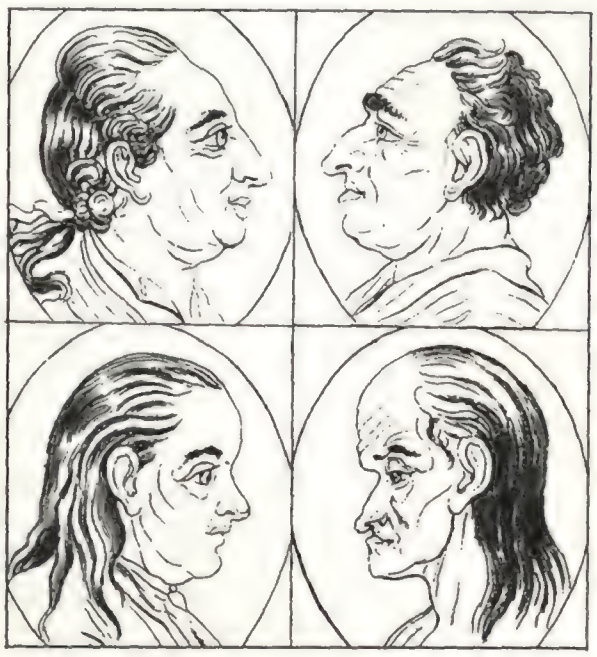
Stopping off at Belleville, Illinois, then a huddle of wooden houses in a swamp, the touring Charles Dickens ran across a "Doctor Crocus" (crocus was slang for quack doctor) lecturing on phrenology. Everywhere Dickens went he was asked if he had not been greatly impressed in Washington, D.C., by the lawmakers' heads, "literally their individual and personal heads, whereon their hair grew, and whereby the phrenological character of each legislator was expressed. . . ." Dickens had *not* been impressed; perhaps because his "organ of veneration" was undeveloped, he had never been bowled over at the sight of *any* legislative body.

Back in Britain, George Combe was asked by Prince Albert to examine the young Prince of Wales (already, at eight, a disappointment to him). Combe found the "organs of ostentativeness, destructiveness, self-esteem, combativeness and love of approbation" were well developed in the future Edward VII; the intellectual organs, however, not so well: "It follows that he will be liable to vehement fits of passion, opposition, self-will and obstinacy, not as voluntary acts, but as mere results of the physiological state of his brain, which he can no more avoid than he can prevent a ringing in his ears."

By the mid-19th century, however, phrenology along with physiognomy had become discredited as a science in Europe. Writing in *Fathers and Sons* in 1860-61, the Russian novelist Ivan Turgenev used different attitudes toward phrenology to demonstrate the generation gap: when



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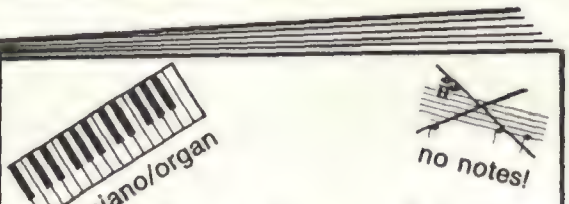

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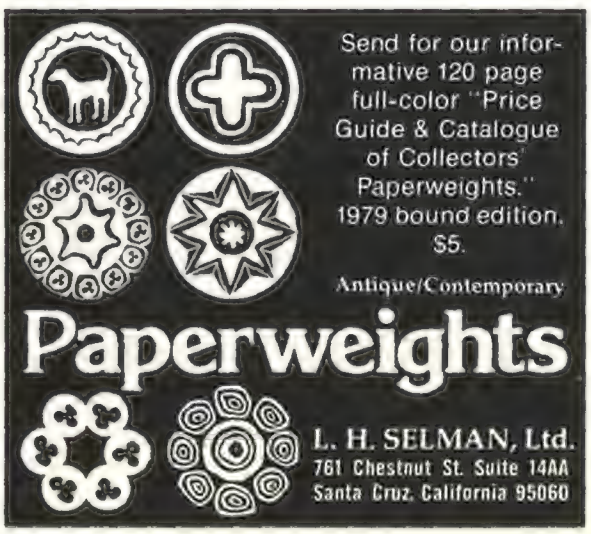
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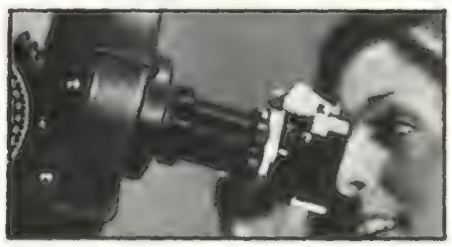

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Bazarov, a medical student in St. Petersburg, goes home on vacation, his father, a dim retired army doctor, assures him that even in the backwoods they try to keep up with the latest scientific developments. "Why," says the father, pointing to a plaster cranium marked off in numbered quadrangles, "we even have some understanding of phrenology!" For the son, however, this representational model belongs with the years-out-of-date medical journals in his father's dusty study.

To amuse himself and his friends, Turgenev invented a parlor game which made lighthearted use of "phys/phren." It was known as the "Portrait Game": "I would draw five or six profiles," he explained, "whatever came into—I don't say my head—into my pen, and everybody would write underneath each profile what he thought of it." At the end, Turgenev read all the contributions aloud for everyone to hear; the author of the silliest would have to confess and accept a prize "with grateful thanks." On March 15, 1864, seven friends gathered to play and made remarkably similar comments about the portrait of a thick-necked, stringy-bearded, heavy-browed man: "fond of the table and good wine especially," "wine merchant," "he loves wine above all things," "drunk all day long," "his life is spent in taverns," "loves his food," "he eats and drinks like an ogre."

Such a game is known to have been played in 19th-century England; possibly some American attics contain the debris of a similar pastime.

Some of the Turgenev portraits—published in 1973—were used experimentally

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It's true, that with greater usage, coal could give us as much as one-half of the new energy we'll need between now and the year 2000 – enough to help loosen the dangerous ties that bind us to expensive and insecure foreign oil.

But those who insist that coal is bad point to abandoned mines which scar the landscape and allow acid water to seep into streams.

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in 1978 by a high school teacher in Massachusetts. Carol Barron had her ninth graders interpret them as a first step in writing short stories. The 14-year-olds saw Turgenev's people—projected on a screen—as ageless types with a current coloration: a "professor acts weird because he never watched TV or anything. All he does is stay in his laboratory and try to find a cure for leuchemea." A "famous sculptor/painter" who "hates people, children especially," is "also a male shovanist." A "retired baseball player" now makes his living by cleaning swimming pools. Carol Barron found the profiles "a wonderful device for free association, for bringing out the kids' skills in developing imaginative details of character because there was total freedom to create a character." And yet, she adds, "in many ways the image they saw was inhibited or controlled by stereotyped thinking." Reminiscent of "phys/phren" guidelines?

When I was editing a book on the Turgenev portraits for publication, I submitted the profile on page 210 to people of various ages and occupations in France, England, Greece and the United States for comment. A man of 90 analyzed it with explicit use of the old "phys/phren" criteria: "a determined man, as his forward pointing chin seems to hint. His beard however may lend deception. He has a large skull and high forehead, suggesting good brain capacity and thinking ability. Small eyes show inquisitiveness.

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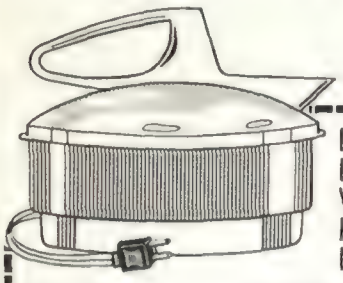

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Traveling phrenologist examines a girl in 1882 scene from the White Mountains.

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But younger people drew the same conclusions: "Thoughtful, cultured and very educated, a writer or a professor." "Intellectual poet-philosopher." "Particularly interested in arts and humanities." In fact, the profile is not *by* Turgenev but *of* him; I sketched it from a book. His face happened to fit a stereotype; a profile of pudgy-faced Dylan Thomas elicits very different responses.

The current scientific view of phrenology was summed up in 1970 by psychiatrist Georges Lanteri-Laura in a serious historical study of Gall's work; the principle of localized cerebral functions has been shown to be sound, but "particulars" of Gall's system have "received confirmation—and that partial—only for the relation between language and the frontal lobe."

As for Lavater's physiognomy, some mental and physical diseases do have linked facial characteristics: a certain eyelid fold, like the displacement of a certain line of the palm, for example, is associated with mongolism. But the fallaciousness of systematic, simplistic "phys/phren" in the line of Lavater and Gall has been demonstrated again and again. In 1974 John Liggett cited in *The Human Face* research showing that "faces

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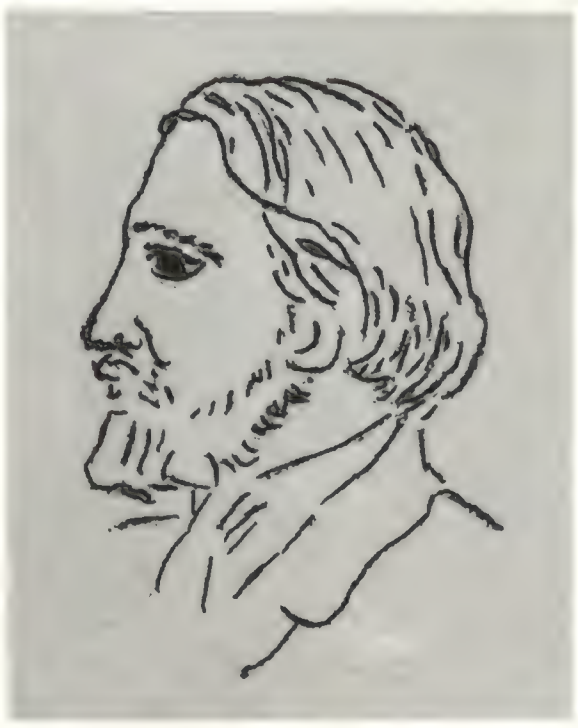
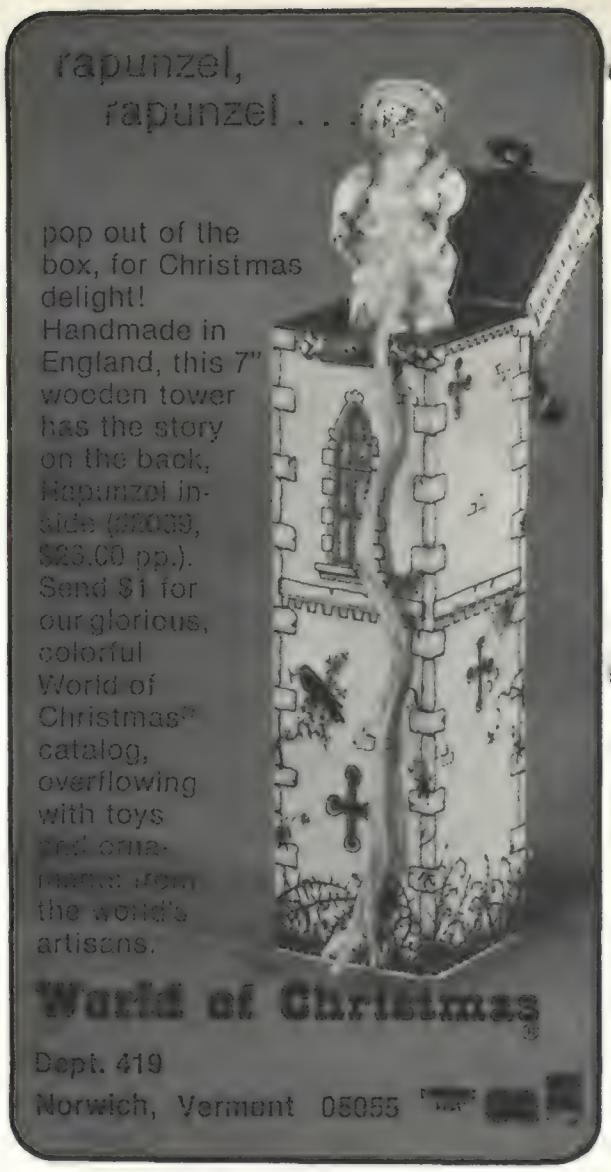
with spectacles might well be judged five percent more intelligent than the same faces seen without. . . ." He himself devised a test in which "vague and indistinct" portraits were submitted for comment: "Answers given by normal healthy people are different from those given by people who are suffering from psychiatric illness."

And yet, as astrology flourishes, so "phys/phren" is not quite dead. Attempts to rehabilitate physiognomy as a science have been made within the past 20 years in Paris, Sydney and Athens. In Tokyo, Hachiro Asano wrote: "The lower the position of the ears, the more marked the individual's nobility." In Barcelona, Dr. Jean Lefas advised: "If you have a long, high, bony forehead, never get friendly with anyone whose head is almost in the form of a ball."

Closer to home, Louis Stanké's *Les Caractères par l'Interprétation des Visages* was published in Montreal in 1974: a small mouth shows that a woman "doesn't like to cook but does like to do housework." In the same year in New York, author Timothy Mar's *Face Reading* applied to photographs of famous faces the rules which supposedly give Chinese physiognomists "almost mystical insight into a person's fate and personality." "Because of the disproportionate upper part of [Lincoln's] face," for instance, "it was fated that he would not be a peacetime President." Martin Luther King jr.'s face



Sketch of novelist Ivan Turgenev is like the profiles he drew in 1860s parlor game.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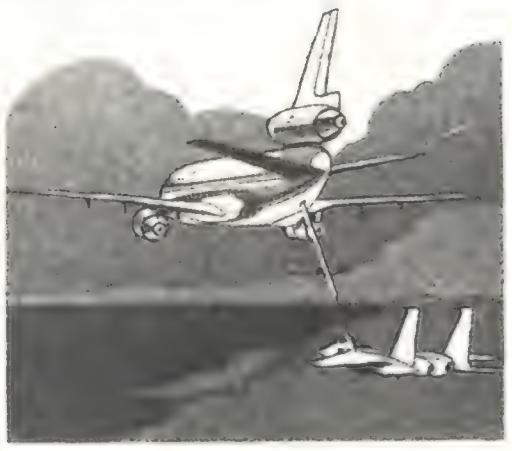

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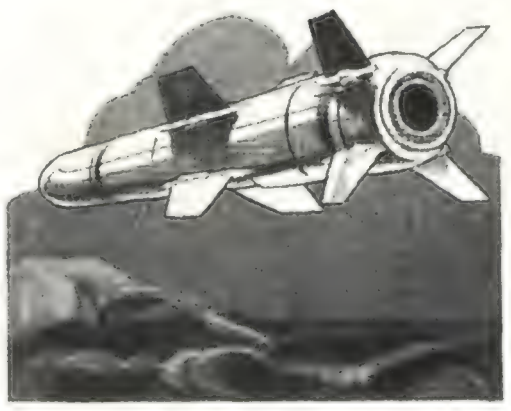

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was "decidedly that of a martyr." Dwight D. Eisenhower had a "face of destiny," with "perfectly matched and controlled eyes." In contrast, Andy Warhol's face (below) is "that of a very gifted artist" with "strength and weakness" represented by his "not identical" eyes. Just last August, Samm Sinclair Baker, coauthor of the widely read *Complete Scarsdale Medical Diet,* was reported to be working on a new book about reading faces.

As for reading heads, in 1970 a book entitled *Phrenology* appeared. The author, Sybil Leek, told how Gall found "the key to limitless understanding of character and personality," and then stressed how-to-do-it: "How to find the organs" once the client is comfortable in his chair ("Three quarters of an inch above the top of the ear we come to the forepart of Secretiveness. Extending the line upwards, we move over to Sublimity and Conscientiousness. . . ."); how to set up in business as a head-reader (capital outlay is small—a chart, tape measure, writing materials). She urges a code of ethics: keep your fingers clean; be strictly professional in touching the organ of amativeness on a client of the opposite sex. And she proposes the creation of a central pool of data for phrenologists all over the world, with a research staff.

The hankering we all have "to find the mind's construction in the face" still seems best diverted—like Louis Viardot's bump of murder and Ivan Turgenev's portraits—into recreation.

According to Chinese physiognomists' rules, Andy Warhol is "very gifted artist."

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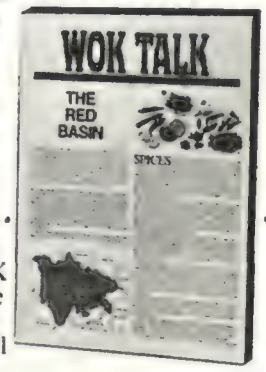

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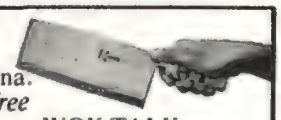

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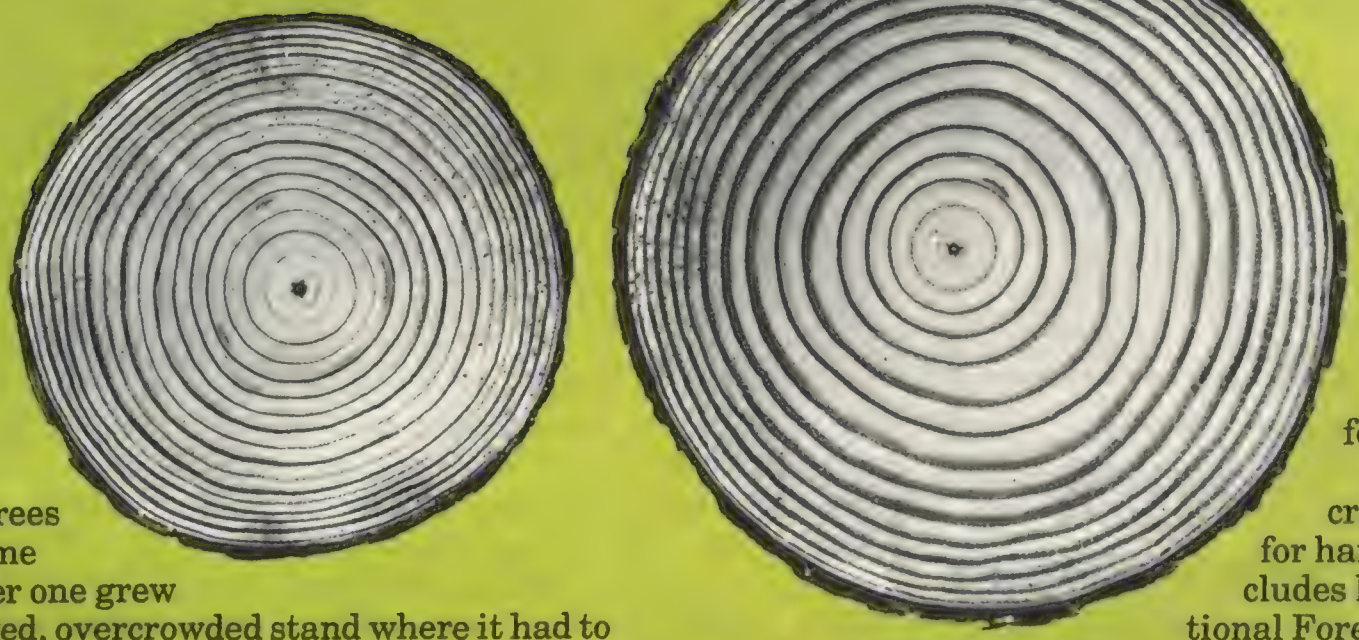

These log slices dramatically show the value of modern, scientific forest management. Both (shown 36% of actual size) are from trees of about the same age. The smaller one grew in an unmanaged, overcrowded stand where it had to compete for sunlight and moisture. The other is from a grove that was thinned to give the best trees room to thrive.

This is just one of many ways forest management can help meet a predicted doubling of domestic demand for wood and paper products in the next 50 years.

The forest industry has learned how to help Mother Nature grow more trees, faster, by applying scientific forest management techniques: encouraging natural regrowth, planting superior seeds and seedlings, fertilizing, protecting against disease and insects, thinning, watching carefully until time to harvest — then starting the cycle again.

Demand keeps rising.

Forest management like this is vital because every year Americans need more homes, more paper products, more packaging and containers, more fuelwood, more of the thousands of other essential products that only the forest can provide.

So far, the country's commercial forest has been able to keep up with demand. (*Commercial forest,* as defined by the U.S. Forest Service, is *all* forestland—whether owned by individuals, government or the industry—that is capable of, and potentially available for, growing repeated crops of trees for harvest. It includes land in National Forests but not in National Parks or Wilderness areas.)

But trees aren't grown equally fast by all commercial forest owners. Though industry has made striking advances on its lands, productivity is lower on privately owned lands and seriously lagging in National Forests.

Productivity not up to potential.

Overall, the U.S. Forest Service estimates average productivity of all commercial forestland is only 61 percent of potential. And at the same time, actual acreage in commercial forests keeps shrinking, as land is withdrawn for homes, highways and other needs of an expanding population.

So we as a nation still have a long way to go if our wood and paper products are not to become scarce and expensive.

If you'd like to be better informed on how important it is to keep America's forests productive, write American Forest Institute, P.O. Box 873, Springfield, VA 22150 for a free booklet, "The Great American Forest."

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Book reviews

American Aristocracy
C. David Heymann
(Dodd, Mead, $17.95)

The Alcotts
Madelon Bedell
(Clarkson N. Potter, $15.95)

For 13 successive generations, the Lowells of Boston, as indicated by the title of C. David Heymann's new biography, *American Aristocracy,* have constituted a privileged Yankee ruling class, a nobility of wealth and intellect, the democratic equivalent of a royal family. Whether engaged in business, culture or public service, the Lowells have abided by their family motto: *Occasionem cognosce,* "Recognize the occasion," all the better, one supposes, to seize it.

Against this solidly respectable background of financial success and civic service, Heymann deftly traces the lives of a triad of Lowell poets: James Russell (1819-1891), Amy (1874-1925) and Robert (1917-1977). By writing such a biography, Heymann places each poet in a milieu of family history, which in the case of the Lowells is tantamount to an American history. Correspondences, interrelations and divergencies Heymann constantly emphasizes. Thus the Lowells and the Lowell poets are not separate and distinct, but, like the circles in a spiral, each leads to and from the other.

About the poetry of James Russell, 19th-century fireside poet, first editor of the *Atlantic Monthly,* U.S. ambassador to Spain and England, Heymann offers little new material. Particularly valuable, however, is Heymann's sketch of the man himself. Beset by sorrow, losing three of four children and his wife when she was only 32, Lowell, the polished, sophisticated poet, vacillated between depression and madcap exhilaration, between liberal humanism and Brahmin conservatism. He never, however, quite successfully transformed his anguish into art and therefore fell short of greatness. As one critic writes, "reading Lowell today is likely to awaken a . . . sense of unrealized potential. . . ."

Looking like a portrait of an unbearded Henry VIII, the short, rotund, cigar-smoking Amy Lowell has been described as the "Biggest One-Man Show Since Buffalo Bill caught the Midnight Flyer to contact Mark Twain." Less the poet than the producer, Amy parlayed her fortune to promulgate the tenets of Imagism, or, as Ezra Pound dubbed the movement, Amygism. From Heymann's sympathetic portrait, Amy emerges as a sensitive, deeply feeling woman whose arrogance concealed a "gigantic inferiority complex."

Heymann is at his best in his treatment of the greatest Lowell poet, Robert. Lowell's three marriages, continual breakdowns, controversial politics, imprisonment as a draft dodger, the suffocating yet supporting weight of the Lowell legacy—these Heymann follows in Robert's confessional poetry. With his detailed, even at times tedious commentary on the poetry, Heymann inspires his reader to return to the poems themselves—Robert's, as well as James Russell's and Amy's.

James Russell Lowell never "successfully transformed his anguish into art."

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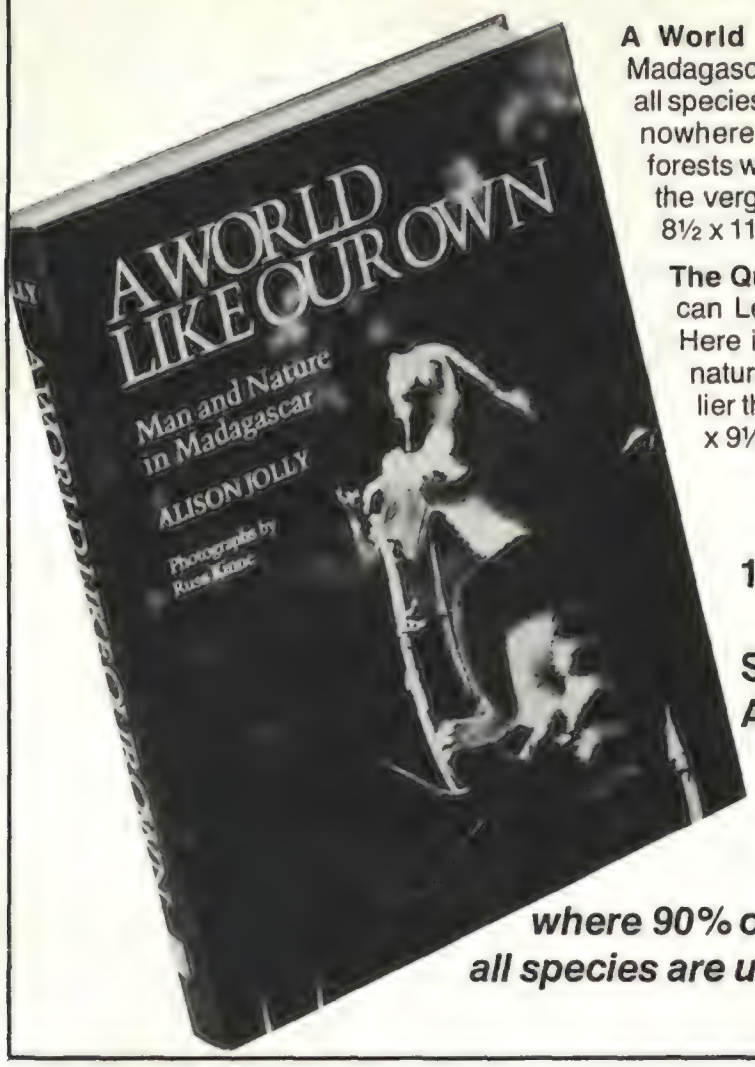
exploring the animal world



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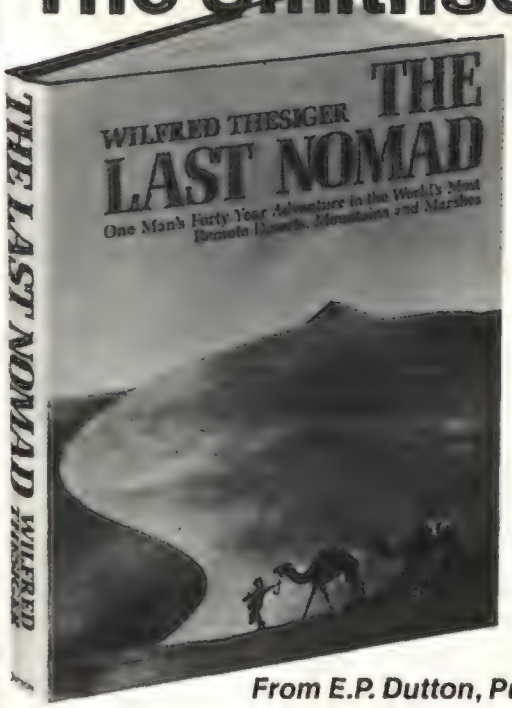

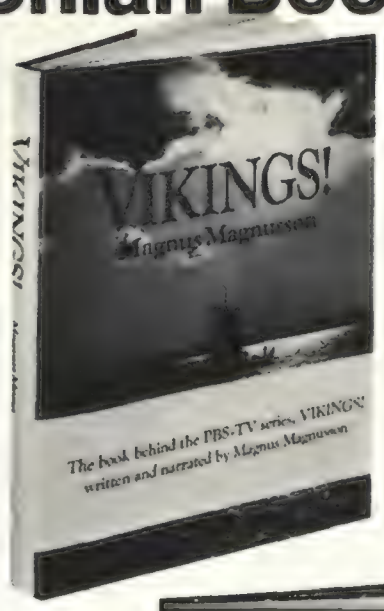

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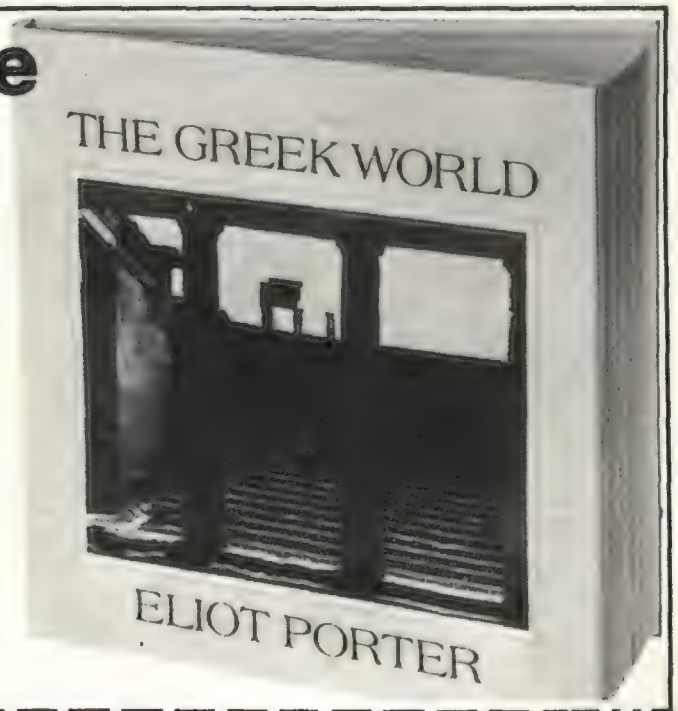

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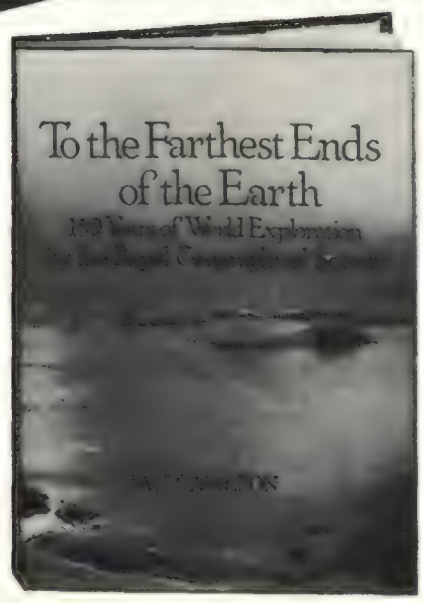

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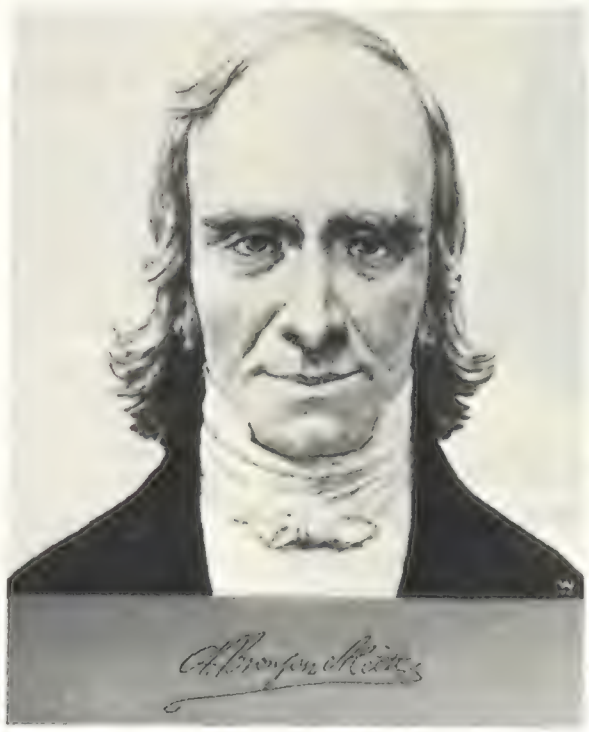
Neither as powerful nor as successful as the Lowells, but certainly important in American history, is the Alcott family, the subject of Madelon Bedell's *The Alcotts*. Unlike the Lowells the Alcotts were improvident, impractical and impoverished, survivors on the fringe of the world of commerce and Lowelldom. If the Boston Lowells spoke to the Cabots (who spoke only to God), Bronson Alcott, it seems, spoke only to himself.



N. C. Wyeth painted Bronson, the "angel with clipped wings," after his death.

Madelon Bedell's chief interest here is the relationship of Bronson and his wife, Abby May: "I wanted to know what the Alcotts were really like . . . what kind of marriage the marriage of Bronson and Abby had been and what kind of family they had created to evoke such a powerful response in their daughter Louisa. I wanted to scrape off the sugar-candy frosting which had accumulated on the legend of the Alcotts."

The results are enlightening. Bedell uses the biography genre creatively: she vividly paints character and atmosphere, distills heaps of research, evaluates, judges, criticizes. Her biography is an engrossing study.

Bronson was fiercely introspective. When he died, his journals numbered 61 volumes. His infant diaries are referred to as the first work of child psychology in America. An iconoclastic educator who did not lecture and scold but "dialogued" with his students, Bronson was bold but blundering, his numerous idealistic projects headed for failure. Friend or associate of Emerson, Thoreau, Hawthorne, Margaret Fuller, Bronson was the purest transcendentalist, the self-absorbed, uncompromising, romantic mystic. He was, as James Russell Lowell saw him, "an angel with clipped wings/Tied to a mortal wife and children. . . ."

In the end, the author demonstrates that it was Bronson's mortal wife and children who rescued him from madness. While he stretched for the transcendental blue, Abby staked herself and her family to terra firma. Fiercely loyal to him, she insisted that she loved her husband not for his arcane speculations, but for himself. She continually served him, cared for him, stuck by him. Both lived true to their independent selves and, amid poverty, misfortune and conflict, reared four daughters, the most famous of whom is Louisa. The Alcott daughters will be the subjects of a second Bedell volume.

These recent biographies of two extraordinary New England families are amply researched and well written. Their subjects, though distinct in gifts and fortune, share at least two major traits: they were aristocrats of intellect and imagination, and they have both been major forces in American cultural history.

—Paul Piazza

Author: *Christopher Isherwood: myth and anti-myth*

Dancing Without Music: Deafness in America
Beryl Lieff Benderly
(Anchor, $11.95)

This book to me is a report on a new world, a world as strange as Mars. It is a book about the deaf and hard-of-hearing, and before you turn away, pause. I almost turned away. I have never been passionately, emotionally interested in deafness. I'll put it more plainly. I've been uninterested.

Or perhaps I've never let interest break through the firm defense, indifference, that we tend to erect to keep out the unthinkable lest it touch us.

No matter. I opened the book and I was immediately struck by the first sentence, "This book is about a holy war." I was soon helplessly reading this rich, fascinating account of the world of those who cannot hear and its war between the "oralists," who hold that many or most

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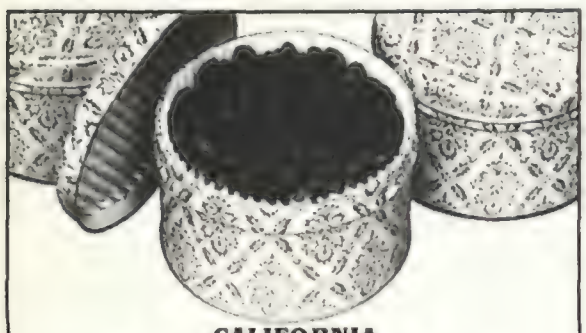

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of these men, women and children can best flourish if they are taught to lip-read and speak, and the "manualists," who hold that most of the deaf can most happily develop within their own sign-language culture.

It is a war to this day between followers of Alexander Graham Bell, the patron saint of the oralists as well as the father of Ma Bell, and the followers of Edward Miner Gallaudet, the first president of the National College of the Deaf and Dumb, ancestor of Gallaudet College in Washington, D.C., which is still the world's only liberal-arts college fully devoted to teaching the deaf. (There are many degrees of hearing impairment; I use the single term for simplicity.)

We are told that one result of that war, with its two far too single-minded camps, has been a long lack of research and effort to find the best course for each person, rather than a rigid rule for all.

There are at least 14 million deaf in this country, including all the "measurably" impaired. Being even modestly impaired, as Benderly points out, can mean a life deprived emotionally, intellectually and economically for lack of ability to hear and understand *all*. The deafened ranks currently contain a huge bulge of budding adults, the rubella epidemic babies of 1963-65.

Of the 14 million who are hearing-impaired, some half million became unable to hear and understand speech prior to their 19th birthday. Where are they? Why don't we see and know more of them? For the same reason we seldom see the blind: they are isolated either by their problem or by the necessity of living within a separate culture of mutual understanding, communication and support. Most marry another deaf person—if they marry. They too often learn poorly, earn poorly and, we read, "stand apart psychologically and socially," because "the way the ear functions" sets "psychic boundaries." Just one sample: "One of the saddest things you can see is parents who need interpreters to talk to their own kids. . . ."

The pure oralists, sometimes wrongly, Benderly believes, say the affected child should *never* be exposed to signed speech, lest he or she never learn to use whatever hearing remains or to lip-read and talk. The manualists point to the many who never approach their potential because they are prevented from learning

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Thus did one United States Senator describe Horatio Greenough's statue of George Washington when it was unveiled in 1840. The sculpture then was left to weather the elements on the Capitol grounds for 65 years until Congress bestowed it on the Smithsonian "to aid the Institution to establish a National Gallery of Art in Washington." The "National Gallery" begun by this gift later became the National Collection of Fine Arts. But the Greenough statue put the Smithsonian permanently into the business of acquiring and displaying works of art. Greenough's work now occupies a place of honor in the Museum of History and Technology, having survived the art critics of that earlier era.

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For further information:

Mr. James Symington
Room 1465
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the sign and body language with which they could more fully communicate.

The writer is more sympathetic to the manualists, but she says there is "no single answer." And she describes some encouraging if still uncertain new movements: "mainstreaming," an experiment in sending the deaf child to the ordinary neighborhood school, good for some, but not for all; new ways of communicating, including "cued speech" (hand signals to enhance lip-reading); and "a growing movement for deaf pride that claims that deaf people have the right not only to be visibly deaf but to be proud of it too."

Soon, perhaps, we will be so accustomed to the new sight of signing alongside a public speaker that we will not even "see" it. Meanwhile, this book may help us, too, to understand.

—Victor Cohn
Staff writer, *Washington Post*

Last Stand at Rosebud Creek: Coal, Power and People
Michael Parfit
(E. P. Dutton, $15.95)

Michael Parfit's first book is a Western in the broadest sense of the word. It takes place in Montana and has good guys and bad guys in a range war of sorts. Only this Western is not about cowboys vs. Indians, nor sodbusters vs. cattlemen.

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Parfit moved to Colstrip from his Idaho home in 1976 to write this book, looking up the power company's history in back issues of local newspapers and interviewing at length 17 Montanans who testified at an emotionally charged citizens' meeting two years earlier. The result is sometimes overwritten but compelling—a modern-day Western that has as its main themes business growth vs. environmental concerns and technological progress vs. natural resource conservation.

The author is one of the book's main characters. While Parfit tells all sides of the story, he leaves little doubt as to

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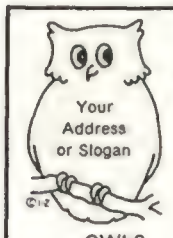

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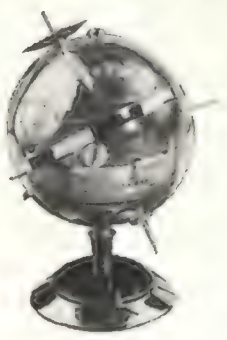

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where he stands. The Colstrip power plants, he writes, "became a symbol, to me, of the oppression of technology, that the point has been passed at which technology that is intended to enhance human beings now controls, diminishes, enslaves them."

The book has three main parts. Parfit opens with a short section in which he sets out his purpose and introduces his 17 main characters. "My intention," he writes, "is to talk to each of them, to let them put structure and meaning into the rage of conflict that surrounds the power plant." The book's middle section is a third-person account of the history of Montana Power's relationship with the town of Colstrip, interspersed with interviews with the 17 persons involved in the controversy. Parfit returns to the first person in the final section, which contains more interviews and a blow-by-blow account of meetings and events.

The main problem with the book is that the flashbacks and the changes from the first to the third person and back jar the reader and confuse, rather than illuminate, the issues. The middle section, in which Parfit takes the traditional journalist-observer approach, is the best. The writing is crisp. The lives of the characters—especially the leading ranchers' spokesman, Wally McRae, company man Martin White and construction workers Myron Brien and Vic Jungers—are clearly and sensitively presented.

But Parfit's writing becomes overly dramatic. He writes: "I have come here to exercise my fear, to promenade my anxiety up here where I can see its [the plant's] source filling the air with cloud. . . . My trailer is tied to Colstrip by three umbilical rubber hoses: water, power, sewer. I'm tied here by the power plant. . . . I have come to Colstrip, to the shadow of the power plant, to tell its story."

Parfit later acknowledges the pitfalls of getting too involved in his story. "I feel less of a reporter, more of a character, caught up in something I can't control," he writes. "Whatever it is I am a part of here, it is not yet over. I feel I am trying to describe a ship . . . from somewhere inside—the boiler room?"

Parfit's subjectivism gets in the way. He should have stayed out of the "boiler room" and concentrated more on reporting the facts.

—Marc Leepson
Staff writer, Editorial Research Reports

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Shambhala is one of several Eastern myths that center on a hidden abode of loveliness, wisdom and strength. James Hilton probably drew upon this tradition to write *Lost Horizon,* the novel that added Shangri-La to the lexicon. But Hilton's sentimentalized version left out the strength. In Tibetan mythology Shambhala is no mere idyllic valley nestled in snowy peaks; it is a fortress. "There," writes Edwin Bernbaum, "a line of enlightened kings is supposed to be guarding the most secret teachings of Buddhism for a time when all truth in the world outside is lost in war and the lust for power and wealth." When the time comes, one of the kings "will come out with a great army to destroy the forces of evil and bring in a golden age."

Bernbaum, who went to Tibet for the Peace Corps and is working on his doctorate in Asian Studies, is a first-rate interpreter of Shambhala and Tibetan Buddhism. His prose is clear and jargon-free, and he speaks with on-the-scene authority. For example, he managed to get an audience with the Dalai Lama, who assured him that "Shambhala has a material existence in this world."

In an effort to understand the importance of the kingdom, to discover what it tells us "about ourselves—about the secret yearnings and intuitions it awakens," Bernbaum began to study related myths. When a lama showed him a guidebook to another legendary sacred valley called Khembalung, hidden, like Shambhala, among mountains, he and his wife set off trekking. They found the valley, in Nepal, but no kings or palaces. Still, it was splendidly forested with rhododendron and pine, and Bernbaum decided it was "the hidden valley I had been seeking." Later the lama explained that the valley would have revealed its deeper levels if the couple had been more advanced in their spiritual progress.

No one, of course, can prove the lama wrong (admittedly, a very Western maneuver). Yet in the age of satellite cartography, hidden-valley myths seem feeble. And they are not alone. Gore Vidal confronted this outmodedness in basing his novel *Kalki* on the Hindu myth of the same name—the myth that, according to Bernbaum, is most closely related to

Padma Sambhava brought Buddhism to Tibet and concealed Khembalung.

Shambhala. When the charismatic American who professes to be Kalki, the ultimate avatar of Buddha, takes to the airways, Vidal's narrator remarks: "I could not imagine the Buddha at Madison Square Garden, on television." But how, otherwise, to convert the world today?

The myth of Shambhala is similarly anachronistic. Recognizing the incredibility of its scenario, Bernbaum expresses his belief that the myth need not be taken literally, that it stands for the individual's struggle toward self-mastery. Yet a myth that need not—cannot—be taken literally is in danger of degenerating into just another beguiling tale.

The central religious problem of the age is this: the old stories that flesh out the world's great religions have lost their credibility and contemporaneity, and thus much of their persuasive force. (Aldous Huxley pointed out that the Old Testament contains "the history of the cruelties and treacheries of a Bronze-Age people.") Yet no one has fashioned new stories or received new visions to take their place. This dilemma can be expressed more concretely. While Russian and American diplomats in Geneva negotiate, somewhere in central Asia the royal herdsmen of Shambhala curry elephants.

—Dennis Drabelle
Washington critic

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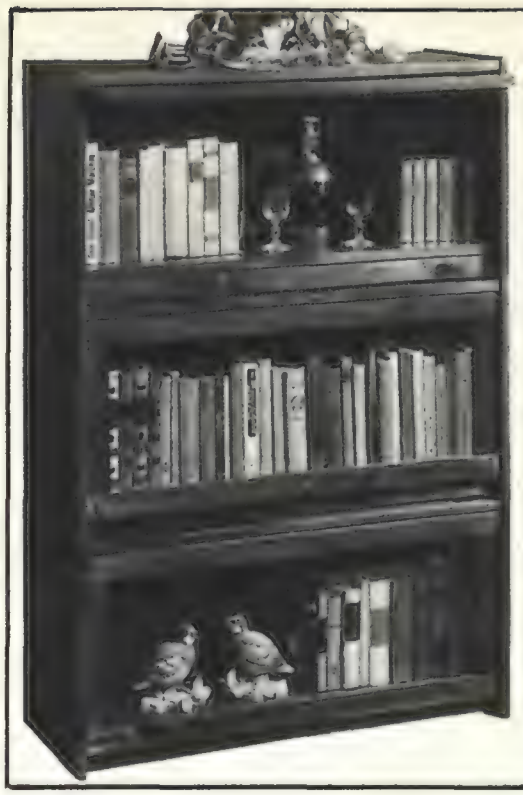

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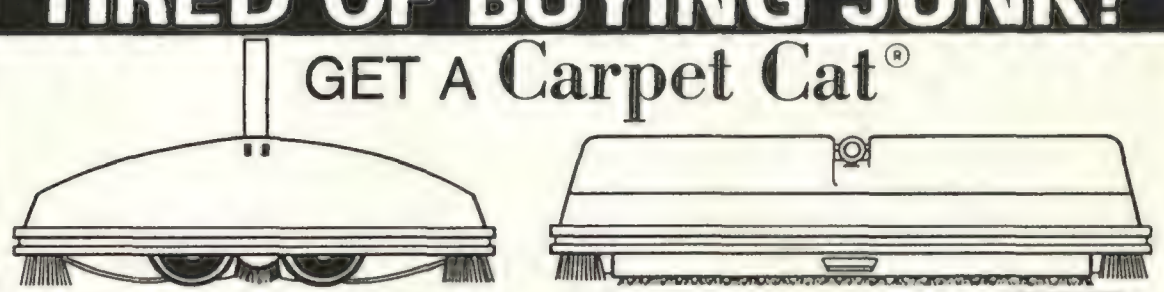
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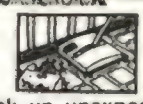
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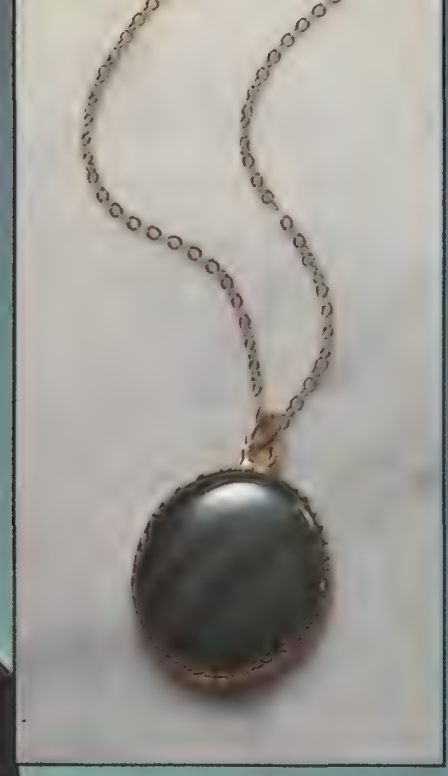

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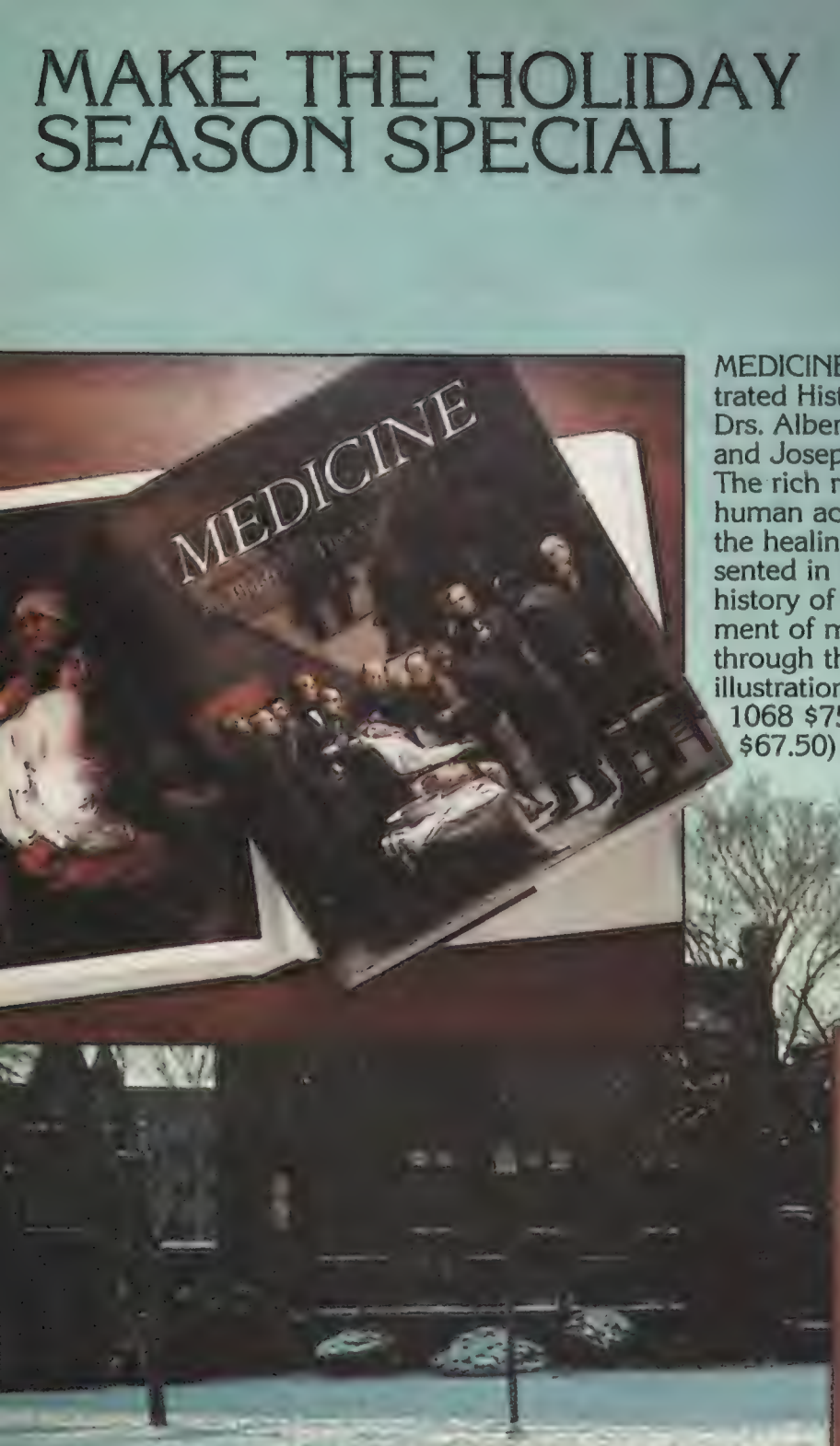

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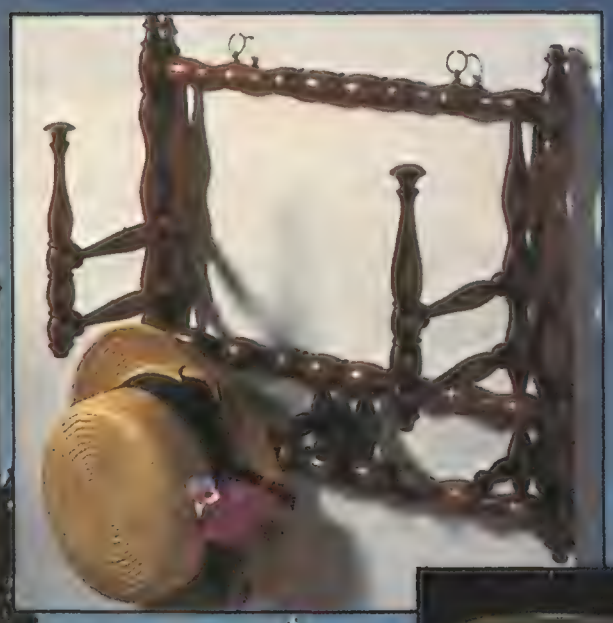

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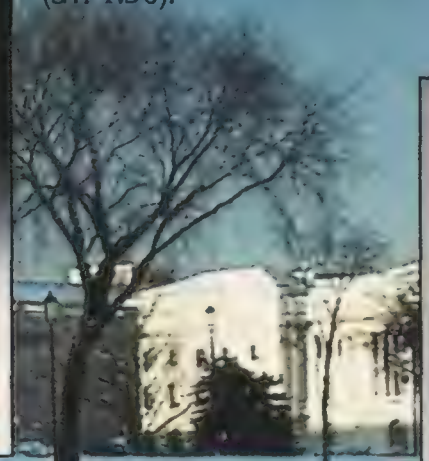

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Baja Whale Watch—February 6-14: Sportfishing boat serves as base for observing gray whales; hikes and lectures focus on natural history of the Baja islands.

Yellowstone in Snow—February 20-March 1: Cross-country skiing in Jackson, Wyoming, and Yellowstone National Park to discover the splendors of nature.

Arts Weekend—March 6-8: Tour Smithsonian art collections and two special exhibits, *New Directions* and the National Gallery's *Search for Alexander.*

Tetons Winter Ecology—March 31-April 8: In cooperation with the Grand Teton Environmental Center, study the delicate balance of nature in winter. Includes cross-country skiing, day and evening programs.

New York—April 2-5 or April 9-12: Exciting weekend program includes museums, opera and theater.

Jefferson's Virginia—April 8-14: Trace development of American architecture with visits to Williamsburg, Charlottesville and Richmond.

Mississippi—April 27-May 4: Plantation tour of Vicksburg and Natchez evokes the charm of antebellum South.

Washington "Anytime" Weekend: Choose any weekend to visit your choice of Smithsonian museums, spend two nights at Loew's L'Enfant Plaza Hotel or Hyatt Regency Washington, each close to the Mall, and see other sights in the city by Tourmobile. Reservations and payments at least ten days prior to arrival.

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These tours range in size from small group experiences to charter adventures and vary in price from low cost to deluxe, depending on the type of travel, destination visited and length of trip:

Antarctica—December 31-January 20: Join prominent lecturers for a study voyage; breathtaking views of glaciers, icebergs, penguins and whales.

Baroque Winter: Vienna, Salzburg, Munich—January 4-18: Walking tours, lectures, opera, concerts and a special Viennese ball.

Mayan Mexico: The Yucatán Peninsula—January 8-20 or February 3-15: A complete tour of these extraordinary ruins.

Guatemala—January 21-February 1 or February 18-March 1: Explore Tikal and other Mayan ruins with an archaeologist.

Kenya—February 5-22: Incomparable wildlife is observed in old safari tradition. Seminars in Nairobi and in the field—Masai Mara, Samburu, Kilaguni.

Micronesia: An Adventure Tour—February 9-28: Unique opportunity to visit the remote, wondrously lovely and unspoiled islands of the South Pacific.

A Hike in New Zealand—February 13-28: Take the "finest walk in the world" along the Milford Track from Lake Te Anau to Milford Sound; also included: Mt. Cook National Park, Queenstown, Erewhon Park and Christchurch.

New Zealand—February 18-March 6: Tour includes talks on natural history, Maori heritage, and a home visit.

Zapotec and Mayan Mexico—March 4-16 or March 18-30: Oaxaca and Zapotec sites of Monte Albán and Mitla; San Cristóbal de las Casas; Palenque, Uxmal and other Mayan ruins in the Yucatán.

Morocco—March 7-22: The medinas and souks of Morocco from Rabat, Meknès, Fez and Marrakesh across the Atlas Mountains to the Sahara. Encompasses the stark Roman ruins of Volubilis, the markets with their textiles and the modern Morocco of Casablanca.

Ecuador and the Galápagos Islands—March 22-April 2: Shipboard seminars enhance observations of rich plant, animal and bird life.

Holland and Belgium—April 8-18: Amsterdam, tulips, four-day canalboat study cruise, and the arts of Brugge.

Mediterranean Spring—April 25-May 6: Join lecturers aboard MTS *Argonaut* for a study of Peloponnesus, Sicily, Malta and Salerno among other sites.

Portugal—May 5-19 or October 6-20: Four days in Lisbon; choice of travel to Alto Alentejo with Evora and fortified hill towns of Estremoz or old Lusitania with Porto, Coimbra and Viseu.

London—May 11-25: Museums, seminars, walking tours and theater; five days visiting the English countryside.

Odyssey of Flight—May 21-June 8: Paris Air Show, the Musée de l'Air, Britain's Shuttleworth Collection and more, in the company of curators from National Air and Space Museum.

Malaysia, Borneo and Singapore—May 25-June 12: Kuala Lumpur, Penang and Malacca—plus a choice of travel to the seldom-visited East coast, the remote National Park, or an exciting excursion to Borneo evoking times of the "White Rajah."

Alpine Countryside—June 6-21 or September 12-27: Stay in an Austrian mountain village and learn about this picturesque historic area.

Waterways of France—June 28-July 9: Aboard the MTS *Argonaut*, visit historic ports, walled cities, chateaux and vineyards with expert lecturers.

The Lakes of Finland—July 11-26: An extravaganza of festivals and cultural happenings.

People's Republic of China: 13 tours from April through October with five different itineraries.

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Selected Studies Seminars

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The Splendor of Byzantium—February 15-20: The magnificent arts of Constantinople and the vast Byzantine Empire in illustrated lectures, along with special tours of the exquisite collections at Dumbarton Oaks (Harvard University's research center) and the Walters Art Gallery (Baltimore) with outstanding experts in Byzantine art, architecture and culture.

Model Airplanes: Then and Now—February 22-27: Foremost talents in every aspect of aeromodeling get together for the first time at the National Air and Space Museum to discuss the panorama of aeromodeling with an abundance of film clips, slides and actual models.

American Painting in the 19th Century—March 22-27: Exploration of the achievements of acknowledged masters such as Copley, Cole, Church, Homer, Ryder and Eakins. Includes tours of the Capitol, National Gallery of Art and National Collection of Fine Arts.

American Antique Furniture—March 22-27: Connoisseurship of masterpieces, 1650-1840. Includes color slides of great collections, detection of fakes, care of antiques, and tours of the elegant Diplomatic Reception Rooms at the Department of State and the Winterthur Museum.

World War II Aviation: March 29-April 3: The outstanding aeronautical staff of the National Air and Space Museum and guest experts offer new insights into how the major air forces of the world came into being, and how quantum jumps in aviation production and performance were achieved. Includes tours to see many of the only surviving World War II planes.

Naval History—April 26-May 1: Famous authorities and authors trace the evolution of the U.S. Navy from the age of sail to nuclear power. Includes films and tours of the Smithsonian's Naval History collections, the Navy Memorial Museum and the U.S. Naval Academy.

357-2477 (tours) or (202) 357-2475 (seminars).

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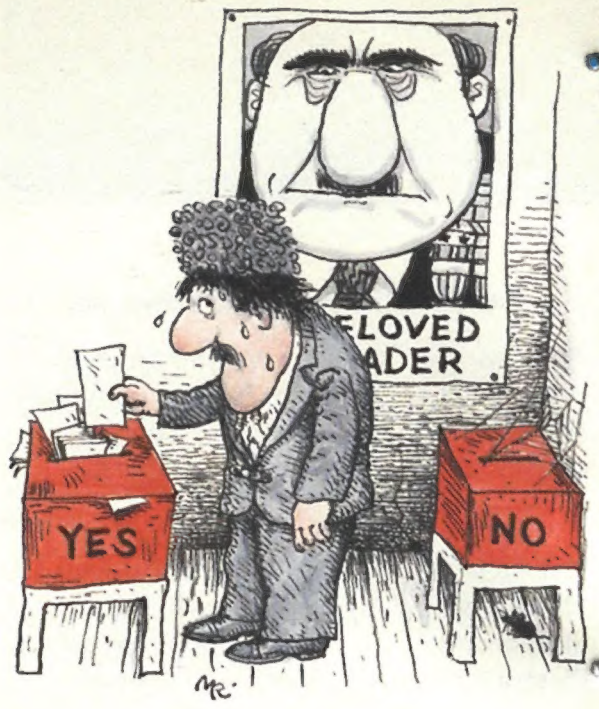
By Patrick Ryan

Easy way to get elected: just run unopposed



As the candidates trudge the last lap of the Presidential campaign trail, it might help them to forget their feet if they contemplated some of the less arduous methods of winning office elsewhere. A certain wistful envy may creep upon them when they ponder last year's report that Seychelles' president, France Albert René, had been returned to power in the June 1979 referendum—he was the only candidate. (You either voted for him, or for nobody.) The resultant overwhelming victory emphasizes that there are more ways of winning elections than the traditional Western process of stumping around the country hoarsely promising the proletariat immediate pie, instant nirvana, and happiness ever after.

Another electoral triumph without undue sweat was achieved by President Jean-Claude Duvalier of Haiti, who was named to office by his father, Papa Doc, and was confirmed in a 1971 referendum by 2,391,916 votes for and (according to one news report) one vote against. I have been concerned ever since about the identity of the intrepid, negating "one" and fearful of what strange fate may have befallen him. (It may have been Graham Greene voting by postal proxy.)

Getting the vote out on the day is always something of a problem, but a splendid example of polling perseverance was given in Corsica when, at a local election in the district of Corte, the registered electorate of 4,303 succeeded in casting a total of 9,647 votes.

When an election official diffidently pointed out that this last figure was 5,344 more than the available electorate, he was earnestly advised by the larger members of a local political family to stop nit-picking and get out on that balcony to announce their victory to the Corsican people.

Although there is no direct evidence indicating that Charles Dickens ever went to Corsica, there can be little doubt that if the candidates had accompanied Mr. Pickwick to Eatanswill, they would have felt happily at home with the fictional Fizkins and the Slumkeys, who contested that constituency with ingenuity. Apart from their employment of the straight Corsican ploy of multiple voting, the opposing agents contested with such novel stratagems as wooing voters' wives with presents of 45 green parasols, locking 33 reserve voters in a coachhouse, rendering 14 would-be electors comatose by lacing their brandy with laudanum, and bribing a coachman to incapacitate a full load of homecoming voters by overturning his coach into the neighborhood canal. The Eatanswill seat was eventually won by the Honorable Samuel Slumkey, who not only obeyed his agent's instructions to shake the hands of 20 common men newly washed for the purpose and to pat the heads of six selected children in arms, but went on to electrify the populace by fervently kissing each of the infant half-dozen.

Children have been used to tip the majority in Northern Ireland, where the Tammany tenet of "vote early, vote often" always has been vigorously upheld. At the election for the short-lived Ulster Convention, the London *Daily Telegraph* reported, regulations limited the number of postal vote application forms to one for each member of a family. One politician, protested a minority party organizer, received a bundle of nearly 20 applications, and "I know of no politician in the North who has 20 children." The excess forms, he claimed, were to be used for the "well-known Irish practise of personation" in which devoted party workers industriously send in postal votes on behalf of the dead.

But perhaps the most efficient method of ensuring that your favorite is a sure bet for top of the poll is operated in the Soviet Union. There are 1,500 seats in the two Houses of the Supreme Soviet and only one candidate, nominated of course by the Communist Party, is allowed to stand for each seat.

On turning up at the polling place, each voter is given a ballot paper already printed up with the name of the selected candidate for his constituency. He may dutifully drop the paper into the ballot box or, before doing so, he may take it into a private booth. If he enters the booth, it can only be to scratch out the name of an official candidate, at which action his own name and address can be duly noted by the attendants and passed on to the KGB for further friendly discussion. Only very few of the most reckless Russians make such a public entry into the private booth.

Perhaps a concluding moral could be that though 30-odd primaries, two conventions and one final election might seem to be a laborious way of appointing your leaders for the next fleeting four years, it is a darned sight better in eventual result than no choice at all.

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